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Developer Kit

SERVER MANAGEMENT

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About This Guide

This guide contains information about concepts, tasks, functions, and structures having to do with server management. Topics discussed include server environment, server management, and TTS. Volume management is discussed separately in the *NDK: Volume Management* documentation.

This guide documents the following services:

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).

Additional Information

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

- *NDK: NLM Development Concepts, Tools, and Functions*
- *NDK: Program Management*
- *NDK: NLM Threads Management*
- *NDK: Connection, Message, and NCP Extensions*
- *NDK: Connection, Message, and NCP Extensions*
- *NDK: Multiple and Inter-File Services*
- *NDK: Single and Intra-File Services*
- *NDK: Volume Management*
- *NDK: Client Management*
- *NDK: Network Management*
- *NDK: Internationalization*
- *NDK: Unicode*
- *NDK: Sample Code*
- *NDK: Getting Started with NetWare Cross-Platform Libraries for C*
- *NDK: Bindery Management*

For CLib and XPlat source code projects, visit Forge (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 Forum (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.

Server Environment Concepts

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This documentation provides and overview of Server Environment, its functions, and features.

1.1 Server Environment Introduction

Server Environment returns detailed statistical information about NetWare® servers. It also allows you to perform the following tasks:

- Check the version of NetWare running on the server
- Check whether you have console operator privileges on a server
- Bring down a server
- Enable and disable server logins
- Attach, log in, and log out of NetWare servers using the bindery

The functions fall into three groups:

- Functions compatible with 3.x and above
- Functions compatible with 4.x, 5.x, and 6.x

The header nwfse.h defines NetWare 4.x, 5.x, and 6.x functions; nwserver.h defines the remaining functions.

For a description of structures and other data definitions that relate to this topic, see "Server Environment Structures" on page 171.

1.2 Server Get Functions for 4.x-6.x

These functions return 4.x, 5.x, and 6.x server information by server name and type.

Function	Header	Comment
NWGetServerInfo	nwfse.h	Returns information about the server including the specified type and name.
NWGetServerSourcesInfo	nwfse.h	Returns information about all servers matching the specified type and name.
NWGetKnownServersInfo	nwfse.h	Returns all known servers.

1.3 Server Information Functions for 4.x-6.x

These functions return detailed information about the NetWare® server associated with the specified connection handle.

Function	Header	Comment
NWGetCacheInfo	nwfse.h	Returns information about a server's file cache.
NWGetFileServerInfo	nwfse.h	Returns server operation statistics information.
NWGetNetWareFileSystemsInfo	nwfse.h	Returns counters of the times specific operations on the file system were performed.
NWGetPacketBurstInfo	nwfse.h	Returns counters and statistics about packet burst on the server.
NWGetIPXSPXInfo	nwfse.h	Returns a server's internal IPX and SPX statistics.
NWGetGarbageCollectionInfo	nwfse.h	Returns counters about a server's memory allocation manager.
NWGetDirCacheInfo	nwfse.h	Returns statistics about a server's directory caching.
NWGetCPUInfo	nwfse.h	Returns CPU information and descriptive strings for the CPU type, numeric coprocessor, and bus type for the indicated CPU number (for 4.x, this is 1).
NWGetVolumeSwitchInfo	nwfse.h	Returns counters containing the number of times a specified code path was taken in the server.
NWGetOSVersionInfo	nwfse.h	Returns version information about the server's operating system.

1.4 Server LAN Board Information Functions for 4.x-6.x

These functions return information about LAN boards on a 4.x, 5.x, or 6.x server.

Function	Header	Comment
NWGetActiveLANBoardList	nwfse.h	Returns a list of LAN Board IDs that can be used as input to other functions.
NWGetLANConfigInfo	nwfse.h	Returns configuration information for a LAN Board.
NWGetLANCommonCountersInfo	nwfse.h	Returns counters common to all types of LAN Boards.
NWGetLANCustomCountersInfo	nwfse.h	Returns counters specific to a particular LAN Board.
NWGetLSLInfo	nwfse.h	Returns information about the link support layer (LSL).

Function	Header	Comment
NWGetLSLLogicalBoardStats	nwfse.h	Returns information about the LSL logical boards.

1.5 Server Media Manager Information Functions for 4.x-6.x

These functions return media manager information for a 4.x, 5.x, or 6.x server.

Function	Header	Comment
NWGetLoadedMediaNumList	nwfse.h	Returns a list of Media IDs for all the managed media objects in a server.
NWGetMediaMgrObjList	nwfse.h	Returns a list of Media IDs for all the media objects matching the specified type.
NWGetMediaMgrObjChildrenList	nwfse.h	Returns a list of children IDs for a media object.
NWGetMediaMgrObjInfo	nwfse.h	Returns information about a media object. This information includes parent, sibling, and children counts and I/O capabilities.
NWGetMediaNameByMediaNum	nwfse.h	Returns the descriptive name and information about a media object specified by the media ID.

1.6 Server Network and Router Information Functions for 4.x-6.x

These functions return routing and service advertising information for a 4.x, 5.x, or 6.x server.

Function	Header	Comment
NWGetKnownNetworksInfo	nwfse.h	Returns a list of networks known to a server.
NWGetNetworkRouterInfo	nwfse.h	Returns information about the specified network to a server, if known.
NWGetGeneralRouterAndSAPInfo	nwfse.h	Returns flags and information concerning the status of routing and SAP on a server.
NWGetNetworkRoutersInfo	nwfse.h	Returns information about routers on the specified network.

1.7 Server NLM Information Functions for 4.x-6.x

These functions return information about NLMs on a 4.x, 5.x, or 6.x server.

Function	Header	Comment
NWGetNLMLoadedList	nwfse.h	Returns a list of NLM IDs that can be used with NWGetNLMInfo and NWGetNLMsResourceTagList.
NWGetNLMInfo	nwfse.h	Returns strings identifying an NLM's filename, name, and copyright, along with detailed information about the module.
NWGetNLMsResourceTagList	nwfse.h	Returns resource tag lists for an NLM. Resource tags are used by NetWare® to identify resources allocated by the module.

1.8 Server Protocol Stack Information Functions for 4.x-6.x

These functions return protocol stack information for a 4.x, 5.x, or 6.x server.

Function	Header	Comment
NWGetActiveProtocolStacks	nwfse.h	Returns a list of Stack IDs for all the loaded protocol stacks in the server.
NWGetProtocolStackConfigInfo	nwfse.h	Returns configuration information describing a protocol stack.
NWGetProtocolStackStatsInfo	nwfse.h	Returns counters for a protocol stack, including the number of custom counters.
NWGetProtocolStkNumsByMediaNum	nwfse.h	Returns Stack IDs for the specified media number.
NWGetProtocolStkNumsByLANBrdNum	nwfse.h	Returns Stack IDs for the protocol stacks bound to a LAN Board.
NWGetProtocolStackCustomInfo	nwfse.h	Returns the custom counters for the protocol stack.

1.9 Server Set Functions for 4.x-6.x

These functions return the set table configuration categories and commands for a 4.x, 5.x, or 6.x server.

Function	Header	Comment
NWGetServerSetCommandsInfo	nwfse.h	Returns all of a server's set table commands for all categories.
NWGetServerSetCategories	nwfse.h	Returns the set table categories on the server.

1.10 Server Volume Information Functions for 4.x-6.x

These functions return volume information for a 4.x, 5.x, or 6.x server.

Function	Header	Comment
NWGetVolumeSegmentList	nwfse.h	Returns a list of volume segment information for the server.
NWGetVolumeInfoByLevel	nwfse.h	Returns detailed information about the specified volume according to the specified information level.

1.11 Server Configuration Functions

These functions read NetWare® server configuration data.

Function	Header	Comment
NWCheckNetWareVersion	nwserver.h	Allows verification of compatibility between applications and the version of NetWare running on a NetWare server.
NWGetFileServerDateAndTime	nwserver.h	Returns the network date and time maintained on the specified NetWare server.
NWGetFileServerDescription	nwserver.h	Returns descriptive information about the specified NetWare server, including company name, version, revision date, and copyright notice.
NWGetFileServerExtendedInfo	nwserver.h	Returns extended information about the specified NetWare server.
NWGetFileServerInformation	nwserver.h	Returns commonly referenced information about a NetWare server including version numbers, connection statistics, SFT level, and TTS level.
NWGetFileServerLoginStatus	nwserver.h	Returns whether clients can log in to the specified workstation.
NWCCGetConnRefInfo	nwserver.h	Returns the name of the NetWare server associated with the specified connection ID.
NWGetFileServerVersionInfo	nwserver.h	Returns name and version information for the specified NetWare server.
NWGetNetworkSerialNumber	nwserver.h	Returns the NetWare server's serial number and the application number.
NWIsManager	nwserver.h	Checks whether a calling station is a manager

1.12 Server Connection Functions

These functions perform NetWare® server attachments and logins.

Function	Header	Comment
NWAttachToFileServer	nwserver.h	Attempts to establish a connection with the specified NetWare server.
NWAttachToFileServerByConn	nwserver.h	Attaches to a NetWare server through a service identified by a connection.
NWLoginToFileServer	nwserver.h	Attempts to log a bindery object in to a NetWare server. This function performs only the login; the workstation must be currently attached to the server.
NWLogoutFromFileServer	nwserver.h	Attempts to log a bindery object out of the specified NetWare server. This function doesn't release the connection.

1.13 Server Console Functions

These functions perform console operations.

Function	Header	Comment
NWCheckConsolePrivileges	nwserver.h	Determines whether the client is a NetWare® server console operator.
NWDisableFileServerLogin	nwserver.h	Disables all logins to a NetWare server.
NWDownFileServer	nwserver.h	Brings a NetWare server down.
NWEnableFileServerLogin	nwserver.h	Enables logins to a NetWare server.
NWSetFileServerDateAndTime	nwserver.h	Sets the date and time of a NetWare server.

Server Environment Functions

2

This documentation alphabetically lists the server environment functions and describes their purpose, syntax, parameters, and return values.

GetServerConfigurationInfo

Returns the engine type and loader type of the server.

Local Servers: nonblocking

Remote Servers: N/A

NetWare Server: 3.12, 3.2, 4.02, 4.1, 5.x, 6.x

Platform: NLM

Service: Server Environment

Syntax

```
#include <nwenvrn.h>

int GetServerConfigurationInfo  (
   int  *serverType,
   int  *loaderType);
```

Parameters

serverType

   (OUT) Points to the NetWare server engine type.

loaderType

   (OUT) Points to the NetWare loader type.

Return Values

Decimal	Hex	Constant
0	0x00	ESUCCESS always.

Remarks

You can pass a NULL pointer in either parameter. When a NULL pointer is passed in, a value will not be returned for the specified parameter.

`serverType` receives one of the following values defined in NWENVRN.H:

Value	Constant	Description
0	TYPE_NORMAL_SERVER	NLM application is running on a normal NetWare server.
1	TYPE_IO_ENGINE	NLM application is running in the IO Engine of a NetWare SFT III™ server.

Value	Constant	Description
2	TYPE_OS_ENGINE	NLM application is running in the MS Engine of a NetWare SFT III server.

loaderType receives one of the following values defined in NWENVRN.H:

Value	Constant	Description
1	LOADER_TYPE_DOS	NLM application is running on a dedicated NetWare server with a DOS loader.
2	LOADER_TYPE_OS2	NLM application is running on a nondedicated server running on OS/2.
3	LOADER_TYPE_MSWIN31	NLM application is running on a nondedicated server running Netware for Windows.

Example

GetServerConfigurationInfo

```
#include <stdio.h>
#include <nwenvrn.h>

void main()
{
   int   serverType, loaderType;

   if (!GetServerConfigurationInfo(&serverType, &loaderType))
   {
      if (loaderType == LOADER_TYPE_OS2)
         printf("This NLM is running on NetWare for OS/2.\n\n");
      else if (loaderType == LOADER_TYPE_DOS)
      {
         if (serverType == TYPE_IO_ENGINE)
            printf("This NLM is running on NetWare SFTIII"
                    " in an IO Engine.\n\n");
         else if (serverType == TYPE_OS_ENGINE)
            printf("This NLM is running on NetWare SFTIII"
                    " in an MS Engine.\n\n");
         else if (serverType == TYPE_NORMAL_SERVER)
            printf("This NLM is running on a dedicated"
                    " NetWare server with a DOS loader.\n\n");
      }
   }
}
```

NWAttachToFileServer

Attaches to the specified NetWare server.

Local Servers: blocking

Remote Servers: blocking

NetWare Server: 3.11, 3.12, 3.2, 4.x, 5.x, 6.x

Platform: NLM, Windows NT, Windows 95, Windows 98

Library: Cross-Platform NetWare Calls (CAL*.*)

Service: Server Environment

Syntax

```
#include <nwserver.h>
or
#include <nwcalls.h>

NWCCODE N_API NWAttachToFileServer (
   const nstr8 N_FAR    *serverName,
   nuint16               scopeFlag,
   NWCONN_HANDLE N_FAR  *newConnID);
```

Delphi Syntax

```
uses calwin32

Function NWAttachToFileServer
  (const serverName : pnstr8;
   scopeFlag : nuint16;
   Var newConnID : NWCONN_HANDLE
) : NWCCODE;
```

Parameters

serverName

   (IN) Points to the name of the server to connect.

scopeFlag

   Is reserved; must be 0.

newConnID

   (OUT) Points to the new connection handle, if the attachment was successful.

Return Values

These are common return values; see Return Values (*Return Values for C*) for more information.

0x0000	SUCCESSFUL
0x8800	ALREADY_ATTACHED
0x8801	INVALID_CONNECTION
0x8847	NO_SERVER_ERROR
0x890A	NLM_INVALID_CONNECTION
0x89FC	UNKNOWN_FILE_SERVER
0x89FF	NO_RESPONSE_FROM_SERVER

Remarks

WARNING: Before attaching to the specified server, NWAttachToFileServer tries to get the server's net address from the default server's Bindery.

NO_RESPONSE_FROM_SERVER will be returned if RIP traffic is filtered on a router but SAP traffic is not. The dynamic object can be read from the bindery, but the request to attach to a server cannot be routed

NCP Calls

0x2222 23 17 Get File Server Information
0x2222 23 22 Get Station's Logged Info (old)
0x2222 23 28 Get Station's Logged Info
0x2222 104 1 Ping for NDS NCP

NWAttachToFileServerByConn

Attaches to a NetWare server through a service identified by a connection.

Local Servers: blocking

Remote Servers: blocking

NetWare Server: 3.11, 3.12, 3.2, 4.x, 5.x, 6.x

Platform: NLM, Windows NT, Windows 95, Windows 98

Library: Cross-Platform NetWare Calls (CAL*.*)

Service: Server Environment

Syntax

```
#include <nwserver.h>
or
#include <nwcalls.h>

NWCCODE N_API NWAttachToFileServerByConn (
   NWCONN_HANDLE         conn,
   const nstr8 N_FAR    *serverName,
   nuint16               scopeFlag,
   NWCONN_HANDLE N_FAR  *newConnID);
```

Delphi Syntax

```
uses calwin32

Function NWAttachToFileServerByConn
  (conn : NWCONN_HANDLE;
   const serverName : pnstr8;
   scopeFlag : nuint16;
   Var newConnID : NWCONN_HANDLE
) : NWCCODE;
```

Parameters

conn

   (IN) Specifies the NetWare server connection handle through which to attach.

serverName

   (IN) Points to a 48-character buffer for the server name (optional).

scopeFlag

   (IN) Reserved for Novell use only; must be 0.

newConnID

   (OUT) Points to the connection handle, if any, to `serverName`.

Return Values

These are common return values; see Return Values (*Return Values for C*) for more information.

0x0000	SUCCESSFUL
0x8800	ALREADY_ATTACHED
0x8801	INVALID_CONNECTION
0x8847	NO_SERVER_ERROR
0x890A	NLM_INVALID_CONNECTION
0x89FC	UNKNOWN_FILE_SERVER

Remarks

NWAttachToFileServerByConn allows attachments to servers not seen by the preferred server.

NCP Calls

0x2222 23 17 Get File Server Information
0x2222 23 22 Get Station's Logged Info (old)
0x2222 23 28 Get Station's Logged Info
0x2222 104 1 Ping for NDS NCP

See Also

NWAttachToFileServer (page 28)

NWCheckConsolePrivileges

Determines if the logged-in user is a console operator.

Local Servers: blocking

Remote Servers: blocking

NetWare Server: 3.11, 3.12, 3.2, 4.x, 5.x, 6.x

Platform: NLM, Windows NT, Windows 95, Windows 98

Library: Cross-Platform NetWare Calls (CAL*.*)

Service: Server Environment

Syntax

```
#include <nwserver.h>
or
#include <nwcalls.h>

NWCCODE N_API  NWCheckConsolePrivileges  (
   NWCONN_HANDLE   conn);
```

Delphi Syntax

```
uses calwin32

Function NWCheckConsolePrivileges
  (conn : NWCONN_HANDLE
) : NWCCODE;
```

Parameters

conn

   (IN) Specifies the NetWare server connection handle.

Return Values

These are common return values; see Return Values (*Return Values for C*) for more information.

0x0000	SUCCESSFUL
0x8801	INVALID_CONNECTION
0x890A	NLM_INVALID_CONNECTION
0x89C6	NO_CONSOLE_PRIVILEGES

NCP Calls

0x2222 23 200 Check Console Privileges

NWCheckNetWareVersion

Checks compatibility of OS modules.

Local Servers: blocking

Remote Servers: blocking

NetWare Server: 3.11, 3.12, 3.2, 4.x, 5.x, 6.x

Platform: NLM, Windows NT, Windows 95, Windows 98

Library: Cross-Platform NetWare Calls (CAL*.*)

Service: Server Environment

Syntax

```
#include <nwserver.h>
or
#include <nwcalls.h>

NWCCODE N_API  NWCheckNetWareVersion
  (NWCONN_HANDLE   conn,
   nuint16         minVer,
   nuint16         minSubVer,
   nuint16         minRev,
   nuint16         minSFT,
   nuint16         minTTS,
   pnuint8         compatibilityFlag);
```

Delphi Syntax

```
uses calwin32

Function NWCheckNetWareVersion
  (conn : NWCONN_HANDLE;
   minVer : nuint16;
   minSubVer : nuint16;
   minRev : nuint16;
   minSFT : nuint16;
   minTTS : nuint16;
   compatibilityFlag : pnuint8
) : NWCCODE;
```

Parameters

conn

 (IN) Specifies the connection handle of the server to check.

minVer

 (IN) Specifies the minimum version required for the module to run.

minSubVer

(IN) Specifies the minimum sub-version required for the module to run.

minRev

(IN) Specifies the minimum revision required for the module to run.

minSFT

(IN) Specifies the minimum revision required to check System Fault Tolerance (SFT).

minTTS

(IN) Specifies the minimum revision required to check Transaction Tracking System (TTS).

compatibilityFlag

(OUT) Points to a flag indicating compatibility:

C Value	Delphi Value	Value Name
0x00	$00	COMPATIBLE
0x01	$01	VERSION_NUMBER_TOO_LOW
0x02	$02	SFT_LEVEL_TOO_LOW
0x04	$04	TTS_LEVEL_TOO_LOW

Return Values

These are common return values; see Return Values (*Return Values for C*) for more information.

0x0000	SUCCESSFUL

NCP Calls

0x2222 23 200 Check Console Privileges

See Also

NWGetFileServerVersionInfo (page 74)

NWDisableFileServerLogin

Allows an operator to instruct the NetWare server to refuse new login requests.

Local Servers: blocking

Remote Servers: blocking

NetWare Server: 3.11, 3.12, 3.2, 4.x, 5.x, 6.x

Platform: NLM, Windows NT, Windows 95, Windows 98

Library: Cross-Platform NetWare Calls (CAL*.*)

Service: Server Environment

Syntax

```
#include <nwserver.h>
or
#include <nwcalls.h>

NWCCODE N_API  NWDisableFileServerLogin  (
   NWCONN_HANDLE   conn);
```

Delphi Syntax

```
uses calwin32

Function NWDisableFileServerLogin
  (conn : NWCONN_HANDLE
) : NWCCODE;
```

Parameters

conn

  (IN) Specifies the NetWare server connection handle.

Return Values

These are common return values; see Return Values (*Return Values for C*) for more information.

0x0000	SUCCESSFUL
0x8801	INVALID_CONNECTION
0x890A	NLM_INVALID_CONNECTION
0x89C6	NO_CONSOLE_PRIVILEGES

Remarks

NWDisableFileServerLogin is usually made during some crucial time-before taking the server down, for instance.

It is recommended that caution be used with NWDisableFileServerLogin. If, after calling NWDisableFileServerLogin, the service connection to the NetWare server is lost or destroyed, a new connection cannot be created; therefore, the user cannot log in again. If no other user on the server has SUPERVISOR privileges, the server must be brought down from the console connected to the server and rebooted before any new users (including the SUPERVISOR) can access it.

To call NWDisableFileServerLogin, you must have console operator rights.

NCP Calls

0x2222 23 203 Disable File Server Login

NWDownFileServer

Allows a supervisor to bring down a NetWare server from a remote console.

Local Servers: blocking

Remote Servers: blocking

NetWare Server: 3.11, 3.12, 3.2, 4.x, 5.x, 6.x

Platform: NLM, Windows NT, Windows 95, Windows 98

Library: Cross-Platform NetWare Calls (CAL*.*)

Service: Server Environment

Syntax

```
#include <nwserver.h>
or
#include <nwcalls.h>

NWCCODE N_API  NWDownFileServer  (
   NWCONN_HANDLE   conn,
   nuint8          forceFlag);
```

Delphi Syntax

```
uses calwin32

Function NWDownFileServer
  (conn : NWCONN_HANDLE;
   forceFlag : nuint8
) : NWCCODE;
```

Parameters

conn

   (IN) Specifies the NetWare server connection handle.

forceFlag

   (IN) Specifies a flag enabling the server to shut down when files are still open (0=enabled).

Return Values

These are common return values; see Return Values (*Return Values for C*) for more information.

0x0000	SUCCESSFUL
0x8801	INVALID_CONNECTION
0x890A	NLM_INVALID_CONNECTION

0x89C6	NO_CONSOLE_PRIVILEGES
0x89FF	Down Failure

Remarks

If `forceFlag` is zero, the server shuts down even if files are open. If `forceFlag` is non-zero and any files are in use or open, 0x89FF (failure) is returned, and the server stays up. If no files are open or in use, the server shuts down, and SUCCESSFUL returns.

To call NWDownFileServer, you must have console operator rights.

NCP Calls

 0x2222 23 211 Down File Server

NWEnableFileServerLogin

Allows an operator to instruct the server to begin accepting new login requests from clients.

Local Servers: blocking

Remote Servers: blocking

NetWare Server: 3.11, 3.12, 3.2, 4.x, 5.x, 6.x

Platform: NLM, Windows NT, Windows 95, Windows 98

Library: Cross-Platform NetWare Calls (CAL*.*)

Service: Server Environment

Syntax

```
#include <nwserver.h>
or
#include <nwcalls.h>

NWCCODE N_API  NWEnableFileServerLogin  (
   NWCONN_HANDLE   conn);
```

Delphi Syntax

```
uses calwin32

Function NWEnableFileServerLogin
  (conn : NWCONN_HANDLE
) : NWCCODE;
```

Parameters

conn

   (IN) Specifies the NetWare server connection handle.

Return Values

These are common return values; see Return Values (*Return Values for C*) for more information.

0x0000	SUCCESSFUL
0x8801	INVALID_CONNECTION
0x890A	NLM_INVALID_CONNECTION
0x89C6	NO_CONSOLE_PRIVILEGES

Remarks

Enabling the server's log state also unlocks the SUPERVISOR's account if it has been locked because of intruder detection.

To call NWEnableFileServerLogin, you must have console operator rights.

If the calling station does not have operator privileges, NO_CONSOLE_PRIVILEGES is returned, and the NetWare server's log state remains unchanged.

NCP Calls

0x2222 23 204 Enable File Server Login

See Also

NWDisableFileServerLogin (page 35)

NWEnumNetAddresses

Enumerates all the network addresses used by the specified NetWare server.

Local Servers: blocking

Remote Servers: blocking

NetWare Server: 5.x, 6.x

Platform: NLM, Windows NT, Windows 95, Windows 98

Library: Cross-Platform NetWare Calls (CAL*.*)

Service: Server Environment

Syntax

```
#include <nwfse.h>
or
#include <nwcalls.h>

NWCCODE NWEnumNetAddresses (
   NWCONN_HANDLE                      conn,
   pnuint32                           searchNumber
   SERVER_AND_VCONSOLE_INFO N_FAR    *serverTimeAndVConsoleInfo,
   pnuint16                           reserved,
   NW_GUID N_FAR                     *fseServerGUID,
   nuint32                            itemsInArray,
   pnuint32                           itemsReturned,
   NWFSE_NETWORK_ADDRESS N_FAR       *fseNetworkAddresses);
```

Delphi Syntax

```
uses calwin32

Type
   NW_GUID = Array[0..15] of nuint8;

Function NWEnumNetAddresses(
  conn : NWCONN_HANDLE;
  Var searchNumber : nuint32;
     Var serverTimeAndVConsoleInfo : SERVER_AND_VCONSOLE_INFO;
     reserved : pnuint16;
     Var fseServerGUID : NW_GUID;
     itemsInArray : nuint32;
  Var itemsReturned : nuint32;
  Var fseNetworkAddresses: NWFSE_NETWORK_ADDRESS
) : NWCCODE;
```

Parameters

conn

(IN) Specifies the NetWare server connection handle.

searchNumber

(IN/OUT) Points to the iteration value used for subsequent calls (set to zero initially).

serverTimeAndVConsoleInfo

(OUT) Points to SERVER_AND_VCONSOLE_INFO, which contains the server console version.

reserved

Is reserved for future use.

fseServerGUID

(OUT) Points to NW_GUID, which contains the server's Global Universal Identification (GUID).

itemsInArray

(IN) Specifies the size of the array pointed to by `fseNetworkAddresses`.

itemsReturned

(OUT) Points to the actual number of addresses returned by `fseNetworkAddresses`.

fseNetworkAddresses

(OUT) Points to NWFSE_NETWORK_ADDRESS, which contains the network address information.

Return Values

These are common return values; see Return Values (*Return Values for C*) for more information.

0x0000	SUCCESSFUL
0x8801	INVALID_CONNECTION
0x880E	NWE_BUFFER_OVERFLOW
0x8977	NWE_BUFFER_TOO_SMALL
0x897E	NCP_BOUNDARY_CHECK_FAILED

Remarks

You need to allocate enough space for the address in the `address` field of NWFSE_NETWORK_ADDRESS, or NWE_BUFFER_OVERFLOW will be returned.

Upon return, the `addressSize` field in NWFSE_NETWORK_ADDRESS will contain the size needed to read the address. To call NWEnumNetAddresses iteratively and avoid the NWE_BUFFER_OVERFLOW error, reset the `addressSize` field to the maximum buffer size.

NCP Calls

0x2222 123 17 Enumerate NCP Service Network Addresses

NWGenerateGUIDs

Returns a Global Universal Identification (GUID) list from a server.

Local Servers: blocking

Remote Servers: blocking

NetWare Server: 5.x, 6.x

Platform: NLM, Windows NT, Windows 95, Windows 98

Library: Cross-Platform NetWare Calls (CAL*.*)

Service: Server Environment

Syntax

```
#include <nwfse.h>
or
#include <nwcalls.h>

NWCCODE NWGenerateGUIDs (
   NWCONN_HANDLE    connHandle,
   nuint32          GUIDSize,
   NW_GUID          GUIDList[]);
```

Delphi Syntax

```
uses calwin32

Function NWGenerateGUIDs
  (connHandle : NWCONN_HANDLE;
   GUIDSize : nuint32;
   GUIDList [] :  NW_GUID
) : NWCCODE;
```

Parameters

connHandle

    (IN) Specifies the connection handle of the server where the GUID list request should be sent.

GUIDSize

    (IN) Specifies the number of GUIDs that will fit in the space allocated for `GUIDList`.

GUIDList

    (OUT) Points to an array of NW_GUID structures that contain a list of the server's GUIDs.

Return Values

These are common return values; see Return Values (*Return Values for C*) for more information.

0x0000	SUCCESSFUL
0x8801	INVALID_CONNECTION
0x880E	NWE_BUFFER_OVERFLOW
0x8869	ACCESS_VIOLATION
0x897E	NCP_BOUNDARY_CHECK_FAILED
0x89FB	INVALID_PARAMETER

Remarks

GUIDSize will be the maximum number of GUIDs generated by the server.

You need to allocate enough space to accommodate the number of GUIDs specified in GUIDSize.

NCP Calls

0x2222 23 33 Generate GUIDs

NWGetActiveConnListByType

Returns a bitmap (set if logged in) of all connections of a specified type.

Local Servers: blocking

Remote Servers: blocking

NetWare Server: 4.x, 5.x, 6.x

Platform: NLM, Windows NT, Windows 95, Windows 98

Library: Cross-Platform NetWare Calls (CAL*.*)

Service: Server Environment

Syntax

```
#include <nwfse.h>
or
#include <nwcalls.h>

NWCCODE N_API  NWGetActiveConnListByType  (
   NWCONN_HANDLE                      conn,
   nuint32                            startConnNum,
   nuint32                            connType,
   NWFSE_ACTIVE_CONN_LIST  N_FAR   *fseActiveConnListByType);
```

Delphi Syntax

```
uses calwin32

Function NWGetActiveConnListByType
   (conn : NWCONN_HANDLE;
    startConnNum : nuint32;
    connType : nuint32;
    Var fseActiveConnListByType : NWFSE_ACTIVE_CONN_LIST
) : NWCCODE;
```

Parameters

conn

(IN) Specifies the NetWare server connection handle.

startConnNum

(IN) Specifies the first connection number to return information about.

connType

(IN) Specifies the type of the connection (see Connection Type Values (*NDK: Connection, Message, and NCP Extensions*)).

fseActiveConnListByType

(OUT) Points to NWFSE_ACTIVE_CONN_LIST.

Return Values

These are common return values; see Return Values (*Return Values for C*) for more information.

0x0000	SUCCESSFUL
0x897E	NCP_BOUNDARY_CHECK_FAILED
0x89FD	Invalid Connection
0x89FF	Failure or Invalid Start Number

Remarks

Console operator rights are NOT necessary to call NWGetActiveConnListByType.

NCP Calls

0x2222 123 14 Get Active Connection List By Type

See Also

NWGetUserInfo (page 155)

NWGetActiveLANBoardList

Returns information about the active LAN boards on a server.

Local Servers: blocking

Remote Servers: blocking

NetWare Server: 4.x, 5.x, 6.x

Platform: NLM, Windows NT, Windows 95, Windows 98

Library: Cross-Platform NetWare Calls (CAL*.*)

Service: Server Environment

Syntax

```
#include <nwfse.h>
or
#include <nwcalls.h>

NWCCODE N_API  NWGetActiveLANBoardList  (
   NWCONN_HANDLE                         conn,
   nuint32                               startNum,
   NWFSE_ACTIVE_LAN_BOARD_LIST  N_FAR    *fseActiveLANBoardList);
```

Delphi Syntax

```
uses calwin32

Function NWGetActiveLANBoardList
  (conn : NWCONN_HANDLE;
   startNum : nuint32;
   Var fseActiveLANBoardList : NWFSE_ACTIVE_LAN_BOARD_LIST
) : NWCCODE;
```

Parameters

conn

   (IN) Specifies the NetWare server connection handle.

startNum

   (IN) Specifies the starting LAN board number.

fseActiveLANBoardList

   (OUT) Points to NWFSE_ACTIVE_LAN_BOARD_LIST.

Return Values

These are common return values; see Return Values (*Return Values for C*) for more information.

0x0000	SUCCESSFUL
0x8801	INVALID_CONNECTION
0x890A	NLM_INVALID_CONNECTION
0x897E	NCP_BOUNDARY_CHECK_FAILED
0x89FF	Failure or Invalid Start Number

Remarks

Console operator rights are NOT necessary to call NWGetActiveLANBoardList.

startNum will normally be 0, unless the amount of LAN Boards is greater than FSE_MAX_NUM_OF_LANS. To return the extra, set startNum to LANLoadedCount + 1.

NCP Calls

 0x2222 123 20 Active LAN Board List

See Also

NWGetLANCommonCountersInfo (page 89), NWGetLANConfigInfo (page 91), NWGetLANCustomCountersInfo (page 93), NWGetLSLLogicalBoardStats (page 99), NWGetProtocolStkNumsByLANBrdNum (page 139)

NWGetActiveProtocolStacks

Returns protocol stack information in NWFSE_ACTIVE_STACKS.

Local Servers: blocking

Remote Servers: blocking

NetWare Server: 4.x, 5.x, 6.x

Platform: NLM, Windows NT, Windows 95, Windows 98

Library: Cross-Platform NetWare Calls (CAL*.*)

Service: Server Environment

Syntax

```
#include <nwfse.h>
or
#include <nwcalls.h>

NWCCODE N_API  NWGetActiveProtocolStacks
  (NWCONN_HANDLE                 conn,
   nuint32                       startNum,
   NWFSE_ACTIVE_STACKS  N_FAR   *fseActiveStacks);
```

Delphi Syntax

```
uses calwin32

Function NWGetActiveProtocolStacks
  (conn : NWCONN_HANDLE;
   startNum : nuint32;
   Var fseActiveStacks : NWFSE_ACTIVE_STACKS
) : NWCCODE;
```

Parameters

conn

  (IN) Specifies the NetWare server connection handle.

startNum

  (IN) Specifies the number to start with if NWGetActiveProtocolStacks is called iteratively.

fseActiveStacks

  (OUT) Points to NWFSE_ACTIVE_STACKS.

Return Values

These are common return values; see Return Values (*Return Values for C*) for more information.

0x0000	SUCCESSFUL
0x897E	NCP_BOUNDARY_CHECK_FAILED
0x89C6	NO_CONSOLE_PRIVILEGES
0x89FF	Failure or Invalid Start Number

Remarks

To call NWGetActiveProtocolStacks, you must have console operator rights.

In the first call, `startNumber` should be 0. On subsequent calls, use the number of stacks retrieved.

NCP Calls

0x2222 123 40 Active Protocol Stacks

See Also

NWGetProtocolStackConfigInfo (page 133), NWGetProtocolStackCustomInfo (page 135), NWGetProtocolStackStatsInfo (page 137), NWGetProtocolStkNumsByLANBrdNum (page 139), NWGetProtocolStkNumsByMediaNum (page 141)

NWGetCacheInfo

Allows a caller from a workstation to get server cache management statistical and operating system information.

Local Servers: blocking

Remote Servers: blocking

NetWare Server: 4.x, 5.x, 6.x

Platform: NLM, Windows NT, Windows 95, Windows 98

Library: Cross-Platform NetWare Calls (CAL*.*)

Service: Server Environment

Syntax

```
#include <nwfse.h>
or
#include <nwcalls.h>

NWCCODE N_API  NWGetCacheInfo  (
   NWCONN_HANDLE              conn,
   NWFSE_CACHE_INFO  N_FAR   *fseCacheInfo);
```

Delphi Syntax

```
uses calwin32

Function NWGetCacheInfo
  (conn : NWCONN_HANDLE;
   Var fseCacheInfo : NWFSE_CACHE_INFO
) : NWCCODE;
```

Parameters

conn

    (IN) Specifies the NetWare server connection handle.

fseCacheInfo

    (IN) Points to NWFSE_CACHE_INFO.

Return Values

These are common return values; see Return Values (*Return Values for C*) for more information.

0x0000	SUCCESSFUL
0x897E	NCP_BOUNDARY_CHECK_FAILED

Remarks

To call NWGetCacheInfo, you must have console operator rights.

NCP Calls

 0x2222 123 01 Get Cache Information

See Also

NWGetDirCacheInfo (page 55)

NWGetCPUInfo

Gets CPU and hardware configuration information about the server.

Local Servers: blocking

Remote Servers: blocking

NetWare Server: 4.x, 5.x, 6.x

Platform: NLM, Windows NT, Windows 95, Windows 98

Library: Cross-Platform NetWare Calls (CAL*.*)

Service: Server Environment

Syntax

```
#include <nwfse.h>
or
#include <nwcalls.h>

NWCCODE N_API  NWGetCPUInfo  (
   NWCONN_HANDLE            conn,
   nuint32                  CPUNum,
   pnstr8                   CPUName,
   pnstr8                   numCoprocessor,
   pnstr8                   bus,
   NWFSE_CPU_INFO  N_FAR    *fseCPUInfo);
```

Delphi Syntax

```
uses calwin32

Function NWGetCPUInfo
  (conn : NWCONN_HANDLE;
   CPUNum : nuint32;
   CPUName : pnstr8;
   numCoprocessor : pnstr8;
   bus : pnstr8;
   Var fseCPUInfo : NWFSE_CPU_INFO
) : NWCCODE;
```

Parameters

conn

   (IN) Specifies the NetWare server connection handle.

CPUNum

   (IN) Specifies the CPU number. Pass one for NetWare 5.x and 6.x and zero for NetWare 4.0.

CPUName

(OUT) Points to the ASCII string of the CPU type. This string space must be allocated by the application.

numCoprocessor

(OUT) Points to the ASCII string of whether or not a coprocessor is present. This string space must be allocated by the application.

bus

(OUT) Points to the ASCII string of the bus type. This string space must be allocated by the application.

fseCPUInfo

(OUT) Points to NWFSE_CPU_INFO.

Return Values

These are common return values; see Return Values (*Return Values for C*) for more information.

0x0000	SUCCESSFUL
0x89FE	DIRECTORY_LOCKED
0x89FF	Failure or Invalid CPU Number

Remarks

Under NETX, if an invalid connection handle is passed to `conn`, NWGetCPUInfo will return 0x0000. NETX will pick a default connection handle if the connection handle cannot be resolved.

Console operator rights are NOT necessary to call NWGetCPUInfo.

NCP Calls

0x2222 123 08 CPU Information

NWGetDirCacheInfo

Returns information about the directory cache manager.

Local Servers: blocking

Remote Servers: blocking

NetWare Server: 4.x, 5.x, 6.x

Platform: NLM, Windows NT, Windows 95, Windows 98

Library: Cross-Platform NetWare Calls (CAL*.*)

Service: Server Environment

Syntax

```
#include <nwfse.h>
or
#include <nwcalls.h>

NWCCODE N_API  NWGetDirCacheInfo  (
   NWCONN_HANDLE                    conn,
   NWFSE_DIR_CACHE_INFO  N_FAR   *fseDirCacheInfo);
```

Delphi Syntax

```
uses calwin32

Function NWGetDirCacheInfo
  (conn : NWCONN_HANDLE;
   Var fseDirCacheInfo : NWFSE_DIR_CACHE_INFO
) : NWCCODE;
```

Parameters

conn

    (IN) Specifies the NetWare server connection handle.

fseDirCacheInfo

    (OUT) Points to NWFSE_DIR_CACHE_INFO.

Return Values

These are common return values; see Return Values (*Return Values for C*) for more information.

0x0000	SUCCESSFUL
0x897E	NCP_BOUNDARY_CHECK_FAILED

Remarks

To call NWGetDirCacheInfo, you must have console operator rights.

NCP Calls

0x2222 123 12 Get Directory Cache Information

NWGetDiskCacheStats (obsolete-moved from .h file 6/99)

was last documented in Release 15 for NetWare 2.x only.

NWGetDiskChannelStats (obsolete-moved from .h file 6/99)

was last documented in Release 15 for NetWare 2.x only.

NWGetFileServerDateAndTime

Returns the network date and time maintained on the specified NetWare server.

Local Servers: blocking

Remote Servers: blocking

NetWare Server: 3.11, 3.12, 3.2, 4.x, 5.x, 6.x

Platform: NLM, Windows NT, Windows 95, Windows 98

Library: Cross-Platform NetWare Calls (CAL*.*)

Service: Server Environment

Syntax

```
#include <nwserver.h>
or
#include <nwcalls.h>

NWCCODE N_API  NWGetFileServerDateAndTime  (
   NWCONN_HANDLE   conn,
   pnuint8         dateTimeBuffer);
```

Delphi Syntax

```
uses calwin32

Function NWGetFileServerDateAndTime
  (conn : NWCONN_HANDLE;
   dateTimeBuffer : pnuint8
) : NWCCODE;
```

Parameters

conn

(IN) Specifies the NetWare server connection handle.

dateTimeBuffer

(OUT) Points to a 7-byte buffer for the network date and time.

Return Values

These are common return values; see Return Values (*Return Values for C*) for more information.

0x0000	SUCCESSFUL
0x8801	INVALID_CONNECTION
0x890A	NLM_INVALID_CONNECTION

Remarks

Since the date and time are not automatically synchronized across an internetwork, dates and times may differ among servers.

The system time clock is a 7-byte value defined in the following format:

Byte	Value	Range
0	Year	80 through 179
1	Month	1 through 12
2	Day	1 through 31
3	Hour	0 through 23 (0 = 12 midnight; 23 = 11 PM)
4	Minute	0 through 59
5	Second	0 through 59
6	Day of Week	0 through 6, 0=Sunday

NOTE: The year value corresponds to the specified years:

80-99 1980-1999
100-179 2000-2079

NCP Calls

0x2222 20 Get File Server Date And Time

NWGetFileServerDescription

Returns information about a NetWare server, including company name, NetWare version, revision date and copyright notice, using descriptive strings.

Local Servers: blocking

Remote Servers: blocking

NetWare Server: 3.11, 3.12, 3.2, 4.x, 5.x, 6.x

Platform: NLM, Windows NT, Windows 95, Windows 98

Library: Cross-Platform NetWare Calls (CAL*.*)

Service: Server Environment

Syntax

```
#include <nwserver.h>
or
#include <nwcalls.h>

NWCCODE N_API  NWGetFileServerDescription  (
   NWCONN_HANDLE   conn,
   pnstr8          companyName,
   pnstr8          revision,
   pnstr8          revisionDate,
   pnstr8          copyrightNotice);
```

Delphi Syntax

```
uses calwin32

Function NWGetFileServerDescription
  (conn : NWCONN_HANDLE;
   companyName : pnstr8;
   revision : pnstr8;
   revisionDate : pnstr8;
   copyrightNotice : pnstr8
) : NWCCODE;
```

Parameters

conn

   (IN) Specifies the NetWare server connection handle.

companyName

   (OUT) Points to the name of the company providing the version of NetWare (80 characters, optional).

revision

   (OUT) Points to the NetWare version and revision description string (80 characters, optional).

revisionDate

> (OUT) Points to the revision date in the form xx/xx/xx. For example: 12/16/91 (24 characters, optional).

copyrightNotice

> (OUT) Points to the copyright notice (80 characters, optional).

Return Values

These are common return values; see Return Values (*Return Values for C*) for more information.

0x0000	SUCCESSFUL
0x8801	INVALID_CONNECTION
0x890A	NLM_INVALID_CONNECTION
0x8996	SERVER_OUT_OF_MEMORY

Remarks

Under NETX, if an invalid connection handle is passed to `conn`, NWGetFileServerDescription will return 0x0000. NETX will pick a default connection handle if the connection handle cannot be resolved.

Each string is NULL-terminated.

For items not desired in the return, substitute NULL. However, all parameter positions must be filled.

Any client attached to the specified server can call NWGetFileServerDescription. Console operator rights are not required.

NCP Calls

0x2222 23 201 Get File Server Description Strings

NWGetFileServerExtendedInfo

Returns extended information about the specified NetWare server, including versions for accounting, VAP, queueing, print server, virtual console, security and internet bridging.

Local Servers: blocking

Remote Servers: blocking

NetWare Server: 3.11, 3.12, 3.2, 4.x, 5.x, 6.x

Platform: NLM, Windows NT, Windows 95, Windows 98

Library: Cross-Platform NetWare Calls (CAL*.*)

Service: Server Environment

Syntax

```
#include <nwserver.h>
or
#include <nwcalls.h>

NWCCODE N_API  NWGetFileServerExtendedInfo  (
   NWCONN_HANDLE    conn,
   pnuint8          accountingVer,
   pnuint8          VAPVer,
   pnuint8          queueingVer,
   pnuint8          printServerVer,
   pnuint8          virtualConsoleVer,
   pnuint8          securityVer,
   pnuint8          internetBridgeVer);
```

Delphi Syntax

```
uses calwin32

Function NWGetFileServerExtendedInfo
  (conn : NWCONN_HANDLE;
   accountingVer : pnuint8;
   VAPVer : pnuint8;
   queueingVer : pnuint8;
   printServerVer : pnuint8;
   virtualConsoleVer : pnuint8;
   securityVer : pnuint8;
   internetBridgeVer : pnuint8
) : NWCCODE;
```

Parameters

conn

   (IN) Specifies the NetWare server connection handle.

accountingVer

   (OUT) Points to the accounting version number (optional).

VAPVer

   (OUT) Points to the VAP version number (optional).

queueingVer

   (OUT) Points to the queueing version number (optional).

printServerVer

   (OUT) Points to the print server version number (optional).

virtualConsoleVer

   (OUT) Points to the virtual console version number (optional).

securityVer

   (OUT) Points to the security version number (optional).

internetBridgeVer

   (OUT) Points to the internet bridging version number (optional).

Return Values

These are common return values; see Return Values (*Return Values for C*) for more information.

0x0000	SUCCESSFUL
0x8801	INVALID_CONNECTION
0x890A	NLM_INVALID_CONNECTION
0x8996	SERVER_OUT_OF_MEMORY

Remarks

NWGetFileServerExtendedInfo returns values as a single byte per parameter, individual values between 0 and 255.

If you don't want certain information, substitute NULL. However, all parameter positions must be filled.

To call NWGetFileServerExtendedInfo, you must have console operator rights.

NCP Calls

0x2222 23 17 Get File Server Information

See Also

NWGetFileServerInformation (page 67), NWGetFileServerVersionInfo (page 74)

NWGetFileServerInfo

Calls for the server's operational statistics.

Local Servers: blocking

Remote Servers: blocking

NetWare Server: 4.x, 5.x, 6.x

Platform: NLM, Windows NT, Windows 95, Windows 98

Library: Cross-Platform NetWare Calls (CAL*.*)

Service: Server Environment

Syntax

```
#include <nwfse.h>
or
#include <nwcalls.h>

NWCCODE N_API  NWGetFileServerInfo  (
   NWCONN_HANDLE                     conn,
   NWFSE_FILE_SERVER_INFO  N_FAR   *fseFileServerInfo);
```

Delphi Syntax

```
uses calwin32

Function NWGetFileServerInfo
  (conn : NWCONN_HANDLE;
   Var fseFileServerInfo : NWFSE_FILE_SERVER_INFO
) : NWCCODE;
```

Parameters

conn

   (IN) Specifies the NetWare server connection handle.

fseFileServerInfo

   (OUT) Points to NWFSE_FILE_SERVER_INFO to get NetWare server information.

Return Values

These are common return values; see Return Values (*Return Values for C*) for more information.

0x0000	SUCCESSFUL
0x897E	NCP_BOUNDARY_CHECK_FAILED

Remarks

Under NETX, if an invalid connection handle is passed to `conn`, NWGetFileServerInfo will return 0x0000. NETX will pick a default connection handle if the connection handle cannot be resolved.

Console operator rights are NOT necessary to call NWGetFileServerInfo.

NCP Calls

0x2222 123 02 Get File Server Information

NWGetFileServerInformation

Returns several items, including NetWare server name, NetWare versions, maximum and peak connections, number of licensed connections currently in use, maximum volumes supported, and SFT and TTS level of support.

Local Servers: blocking

Remote Servers: blocking

NetWare Server: 3.11, 3.12, 3.2, 4.x, 5.x, 6.x

Platform: NLM, Windows NT, Windows 95, Windows 98

Library: Cross-Platform NetWare Calls (CAL*.*)

Service: Server Environment

Syntax

```
#include <nwserver.h>
or
#include <nwcalls.h>

NWCCODE N_API  NWGetFileServerInformation  (
   NWCONN_HANDLE    conn,
   pnstr8           serverName,
   pnuint8          majorVer,
   pnuint8          minVer,
   pnuint8          rev,
   pnuint16         maxConns,
   pnuint16         maxConnsUsed,
   pnuint16         connsInUse,
   pnuint16         numVolumes,
   pnuint8          SFTLevel,
   pnuint8          TTSLevel);
```

Delphi Syntax

```
uses calwin32

Function NWGetFileServerInformation
  (conn : NWCONN_HANDLE;
   serverName : pnstr8;
   majorVer : pnuint8;
   minVer : pnuint8;
   rev : pnuint8;
   maxConns : pnuint16;
   maxConnsUsed : pnuint16;
   connsInUse : pnuint16;
   numVolumes : pnuint16;
   SFTLevel : pnuint8;
   TTSLevel : pnuint8
) : NWCCODE;
```

Parameters

conn

(IN) Specifies the NetWare server connection handle.

serverName

(OUT) Points to the name of NetWare server (48 bytes, optional).

majorVer

(OUT) Points to the major NetWare version number (optional).

minVer

(OUT) Points to the minor NetWare version number (optional).

rev

(OUT) Points to the revision number of the NetWare OS on NetWare server (optional).

maxConns

(OUT) Points to the maximum number of connections the server will support (optional). The connection table for NetWare 4.x is dynamic. This number will be the maximum of what the table has grown to.

maxConnsUsed

(OUT) Points to the highest number of connections simultaneously in use (optional).

connsInUse

(OUT) Points to the number of licensed connections the server currently has in use (optional).

numVolumes

(OUT) Points to the maximum number of volumes the server will support (optional).

SFTLevel

(OUT) Points to the SFT level the server supports (optional).

TTSLevel

(OUT) Points to the TTS Level of NetWare server operating system (optional).

Return Values

These are common return values; see Return Values (*Return Values for C*) for more information.

0x0000	SUCCESSFUL
0x8996	SERVER_OUT_OF_MEMORY

Remarks

NWGetFileServerInformation will only return the number of licensed connections in use. For NetWare 3.x, all connections are considered licensed. For NetWare 4.x, many connections do not require a server license and will not be returned in connsInUse.

Under NETX, if an invalid connection handle is passed to `conn`, NWGetFileServerInformation will return 0x0000. NETX will pick a default connection handle if the connection handle cannot be resolved.

The buffer allocated to receive NetWare server name should be at least 48 bytes long.

Substitute NULL for a parameter if a return is not desired. However, all parameter positions must be filled. Any client can call NWGetFileServerInformation without logging in to the specified NetWare server.

NCP Calls

0x2222 23 17 Get File Server Information

See Also

NWGetFileServerInformation (page 67), NWGetFileServerVersionInfo (page 74)

NWGetFileServerLANIOStats (obsolete-moved from .h file 6/99)

was last documented in Release 15 for NetWare 2.x only.

NWGetFileServerLoginStatus

Returns a NetWare server's login status.

Local Servers: blocking

Remote Servers: blocking

NetWare Server: 3.11, 3.12, 3.2, 4.x, 5.x, 6.x

Platform: NLM, Windows NT, Windows 95, Windows 98

Library: Cross-Platform NetWare Calls (CAL*.*)

Service: Server Environment

Syntax

```
#include <nwserver.h>
or
#include <nwcalls.h>

NWCCODE N_API  NWGetFileServerLoginStatus  (
   NWCONN_HANDLE    conn,
   pnuint8          loginEnabledFlag);
```

Delphi Syntax

```
uses calwin32

Function NWGetFileServerLoginStatus
  (conn : NWCONN_HANDLE;
   loginEnabledFlag : pnuint8
) : NWCCODE;
```

Parameters

conn

   (IN) Specifies the NetWare server connection handle.

loginEnabledFlag

   (OUT) Points to a zero flag if clients cannot log in and non-zero if they can.

Return Values

These are common return values; see Return Values (*Return Values for C*) for more information.

0x0000	SUCCESSFUL
0x8801	INVALID_CONNECTION
0x890A	NLM_INVALID_CONNECTION

0x8996	SERVER_OUT_OF_MEMORY

Remarks

NWGetFileServerLoginStatus determines if the users' logins are currently allowed on the target server.

NCP Calls

0x2222 23 205 Get File Server Login Status

NWGetFileServerMiscInfo (obsolete 12/98)

was last documented in Release 15 for NetWare 2.x only.

NWGetFileServerVersionInfo

Returns information about a NetWare server's name and version levels.

Local Servers: blocking

Remote Servers: blocking

NetWare Server: 3.11, 3.12, 3.2, 4.x, 5.x, 6.x

Platform: NLM, Windows NT, Windows 95, Windows 98

Library: Cross-Platform NetWare Calls (CAL*.*)

Service: Server Environment

Syntax

```
#include <nwserver.h>
or
#include <nwcalls.h>

NWCCODE N_API  NWGetFileServerVersionInfo  (
   NWCONN_HANDLE          conn,
   VERSION_INFO  N_FAR   *versBuffer);
```

Delphi Syntax

```
uses calwin32

Function NWGetFileServerVersionInfo
  (conn : NWCONN_HANDLE;
   Var versBuffer : VERSION_INFO
) : NWCCODE;
```

Parameters

conn

   (IN) Specifies the NetWare server connection handle.

versBuffer

   (OUT) Points to the VERSION_INFO structure, which contains the NetWare server version information.

Return Values

These are common return values; see Return Values (*Return Values for C*) for more information.

0x0000	SUCCESSFUL
0x8801	INVALID_CONNECTION

0x890A	NLM_INVALID_CONNECTION
0x8996	SERVER_OUT_OF_MEMORY

Remarks

Console operator rights and an authenticated connection are NOT necessary to call NWGetFileServerVersionInfo; you only need an attachment.

To get product version information (major, minor, and revision), call NWGetNetWareProductVersion (page 114).

NCP Calls

0x2222 23 17 Get File Server Information

NWGetFileSystemStats (obsolete-moved from .h file 6/99)

was last documented in Release 15 for NetWare 2.x only.

NWGetFSDriveMapTable (obsolete-moved from .h file 6/99)

was last documented in Release 15 for NetWare 2.x only.

NWGetFSLANDriverConfigInfo (obsolete-moved from .h file 6/99)

was last documented in Release 15 for NetWare 2.x only.

NWGetGarbageCollectionInfo

Returns the server's memory manager's statistical information.

Local Servers: blocking

Remote Servers: blocking

NetWare Server: 4.x, 5.x, 6.x

Platform: NLM, Windows NT, Windows 95, Windows 98

Library: Cross-Platform NetWare Calls (CAL*.*)

Service: Server Environment

Syntax

```
#include <nwfse.h>
or
#include <nwcalls.h>

NWCCODE N_API  NWGetGarbageCollectionInfo  (
   NWCONN_HANDLE                              conn,
   NWFSE_GARBAGE_COLLECTION_INFO  N_FAR   *fseGarbageCollectionInfo);
```

Delphi Syntax

```
uses calwin32

Function NWGetGarbageCollectionInfo
   (conn : NWCONN_HANDLE;
   Var fseGarbageCollectionInfo : NWFSE_GARBAGE_COLLECTION_INFO
) : NWCCODE;
```

Parameters

conn

   (IN) Specifies the NetWare server connection handle.

fseGarbageCollectionInfo

   (OUT) Points to NWFSE_GARBAGE_COLLECTION_INFO returning garbage collection
   information.

Return Values

These are common return values; see Return Values (*Return Values for C*) for more information.

0x0000	SUCCESSFUL
0x897E	NCP_BOUNDARY_CHECK_FAILED

Remarks

To call NWGetGarbageCollectionInfo, you must have console operator rights.

NCP Calls

0x2222 123 07 Garbage Collection Information

NWGetGeneralRouterAndSAPInfo

Returns router information received from RIP and SAP packets.

Local Servers: blocking

Remote Servers: blocking

NetWare Server: 4.x, 5.x, 6.x

Platform: NLM, Windows NT, Windows 95, Windows 98

Library: Cross-Platform NetWare Calls (CAL*.*)

Service: Server Environment

Syntax

```
#include <nwfse.h>
or
#include <nwcalls.h>

NWCCODE N_API  NWGetGeneralRouterAndSAPInfo  (
   NWCONN_HANDLE                          conn,
   NWFSE_GENERAL_ROUTER_SAP_INFO  N_FAR   *fseGeneralRouterSAPInfo);
```

Delphi Syntax

```
uses calwin32

Function NWGetGeneralRouterAndSAPInfo
   (conn : NWCONN_HANDLE;
    Var fseGeneralRouterSAPInfo : NWFSE_GENERAL_ROUTER_SAP_INFO
) : NWCCODE;
```

Parameters

conn

   (IN) Specifies the NetWare server connection handle.

fseGeneralRouterSAPInfo

   (OUT) Points to NWFSE_GENERAL_ROUTER_SAP_INFO returning general router SAP information.

Return Values

These are common return values; see Return Values (*Return Values for C*) for more information.

0x0000	SUCCESSFUL
0x8801	INVALID_CONNECTION

0x890A	NLM_INVALID_CONNECTION
0x897E	NCP_BOUNDARY_CHECK_FAILED
0x89C6	NO_CONSOLE_PRIVILEGES

Remarks

To call NWGetGeneralRouterAndSAPInfo, you must have console operator rights.

NCP Calls

0x2222 123 50 Get General Router and SAP Information

NWGetIPXSPXInfo

Returns the server's internal IPX and SPX statistics information.

Local Servers: blocking

Remote Servers: blocking

NetWare Server: 4.x, 5.x, 6.x

Platform: NLM, Windows NT, Windows 95, Windows 98

Library: Cross-Platform NetWare Calls (CAL*.*)

Service: Server Environment

Syntax

```
#include <nwfse.h>
or
#include <nwcalls.h>

NWCCODE N_API  NWGetIPXSPXInfo  (
   NWCONN_HANDLE              conn,
   NWFSE_IPXSPX_INFO  N_FAR   *fseIPXSPXInfo);
```

Delphi Syntax

```
uses calwin32

Function NWGetIPXSPXInfo
  (conn : NWCONN_HANDLE;
   Var fseIPXSPXInfo : NWFSE_IPXSPX_INFO
) : NWCCODE;
```

Parameters

conn

   (IN) Specifies the NetWare server connection handle.

fseIPXSPXInfo

   (OUT) Points to NWFSE_IPXSPX_INFO returning IPX/SPX information.

Return Values

These are common return values; see Return Values (*Return Values for C*) for more information.

0x0000	SUCCESSFUL
0x897E	NCP_BOUNDARY_CHECK_FAILED

Remarks

Under NETX, if an invalid connection handle is passed to `conn`, NWGetIPXSPXInfo will return 0x0000. NETX will pick a default connection handle if the connection handle cannot be resolved.

Console operator rights are NOT necessary to call NWGetIPXSPXInfo.

NCP Calls

0x2222 123 06 IPX SPX Information

NWGetKnownNetworksInfo

Returns information about networks for which the server has received Routing Information Packets (RIPs).

Local Servers: blocking

Remote Servers: blocking

NetWare Server: 4.x, 5.x, 6.x

Platform: NLM, Windows NT, Windows 95, Windows 98

Library: Cross-Platform NetWare Calls (CAL*.*)

Service: Server Environment

Syntax

```
#include <nwfse.h>
or
#include <nwcalls.h>

NWCCODE N_API  NWGetKnownNetworksInfo
   (NWCONN_HANDLE                      conn,
    nuint32                            startNum,
    NWFSE_KNOWN_NETWORKS_INFO  N_FAR   *fseKnownNetworksInfo);
```

Delphi Syntax

```
uses calwin32

Function NWGetKnownNetworksInfo
   (conn : NWCONN_HANDLE;
    startNum : nuint32;
    Var fseKnownNetworksInfo : NWFSE_KNOWN_NETWORKS_INFO
) : NWCCODE;
```

Parameters

conn

   (IN) Specifies the NetWare server connection handle.

startNum

   (IN) Specifies the starting network with which to begin the search (commonly 0 to begin the search, on subsequent calls it should be the total number of networks returned up to the call.)

fseKnownNetworksInfo

   (OUT) Points to NWFSE_KNOWN_NETWORKS_INFO returning information about known networks.

Return Values

These are common return values; see Return Values (*Return Values for C*) for more information.

0x0000	SUCCESSFUL
0x8801	INVALID_CONNECTION
0x890A	NLM_INVALID_CONNECTION
0x897E	NCP_BOUNDARY_CHECK_FAILED

Remarks

To call NWGetKnownNetworksInfo, you must have console operator rights.

NCP Calls

0x2222 123 53 Get Known Networks Information

See Also

NWGetNetworkRouterInfo (page 116), NWGetNetworkRoutersInfo (page 118)

NWGetKnownServersInfo

Returns information about servers advertising themselves to the server with SAP packets.

Local Servers: blocking

Remote Servers: blocking

NetWare Server: 4.x, 5.x, 6.x

Platform: NLM, Windows NT, Windows 95, Windows 98

Library: Cross-Platform NetWare Calls (CAL*.*)

Service: Server Environment

Syntax

```
#include <nwfse.h>
or
#include <nwcalls.h>

NWCCODE N_API  NWGetKnownServersInfo
  (NWCONN_HANDLE                      conn,
   nuint32                            startNum,
   nuint32                            serverType,
   NWFSE_KNOWN_SERVER_INFO  N_FAR   *fseKnownServerInfo);
```

Delphi Syntax

```
uses calwin32

Function NWGetKnownServersInfo
  (conn : NWCONN_HANDLE;
   startNum : nuint32;
   serverType : nuint32;
   Var fseKnownServerInfo : NWFSE_KNOWN_SERVER_INFO
) : NWCCODE;
```

Parameters

conn

   (IN) Specifies the NetWare server connection handle.

startNum

   (IN) Specifies the cumulative number of servers returned from all previous calls; normally, zero (0) for the first call.

serverType

   (IN) Specifies the server type:

   0x0400 NetWare server
   0xFFFF All other server types

fseKnownServerInfo

   (OUT) Points to NWFSE_KNOWN_SERVER_INFO containing known server information.

Return Values

These are common return values; see Return Values (*Return Values for C*) for more information.

0x0000	SUCCESSFUL
0x8801	INVALID_CONNECTION
0x8901	Returned from NWFSE_KNOWN_SERVER_INFO when no more items are found
0x890A	NLM_INVALID_CONNECTION
0x897E	NCP_BOUNDARY_CHECK_FAILED
0x89C6	NO_CONSOLE_PRIVILEGES

Remarks

To call NWGetKnownServersInfo, you must have console operator rights.

startNum should be set to zero on the first call. On subsequent calls, the value returned in the numberOfEntries field in the SERVER_AND_VCONSOLE_INFO structure should be added to the value in startNum until INVALID_CONNECTION is returned.

NCP Calls

0x2222 123 56 Get Known Servers Information

See Also

NWGetServerSourcesInfo (page 153)

NWGetLANCommonCountersInfo

Returns common statistics for a LAN board.

Local Servers: blocking

Remote Servers: blocking

NetWare Server: 4.x, 5.x, 6.x

Platform: NLM, Windows NT, Windows 95, Windows 98

Library: Cross-Platform NetWare Calls (CAL*.*)

Service: Server Environment

Syntax

```
#include <nwfse.h>
or
#include <nwcalls.h>

NWCCODE N_API  NWGetLANCommonCountersInfo  (
   NWCONN_HANDLE                            conn,
   nuint32                                  boardNum,
   nuint32                                  blockNum,
   NWFSE_LAN_COMMON_COUNTERS_INFO N_FAR   *fseLANCommonCountersInfo);
```

Delphi Syntax

```
uses calwin32

Function NWGetLANCommonCountersInfo
  (conn : NWCONN_HANDLE;
   boardNum : nuint32;
   blockNum : nuint32;
   Var fseLANCommonCountersInfo : NWFSE_LAN_COMMON_COUNTERS_INFO
) : NWCCODE;
```

Parameters

`conn`

> (IN) Specifies the NetWare server connection handle.

`boardNum`

> (IN) Specifies the board numbers returned by NWGetActiveLANBoardList.

`blockNum`

> (IN) Specifies the starting number of the common counters to return; usually set to zero (0) to return all the counters.

`fseLANCommonCountersInfo`

(OUT) Points to NWFSE_LAN_COMMON_COUNTERS_INFO returning LAN common counters information.

Return Values

These are common return values; see Return Values (*Return Values for C*) for more information.

0x0000	SUCCESSFUL
0x8801	INVALID_CONNECTION
0x890A	NLM_INVALID_CONNECTION
0x897E	NCP_BOUNDARY_CHECK_FAILED
0x89C6	NO_CONSOLE_PRIVILEGES
0x89FF	Failure or Invalid Board or Block Number

Remarks

To call NWGetLANCommonCountersInfo, you must have console operator rights.

NCP Calls

0x2222 123 22 LAN Common Counters Information

See Also

NWGetActiveLANBoardList (page 47), NWGetLANConfigInfo (page 91), NWGetLANCustomCountersInfo (page 93), NWGetLSLLogicalBoardStats (page 99), NWGetProtocolStkNumsByLANBrdNum (page 139)

NWGetLANConfigInfo

Returns configuration information for the LAN board identified by `boardNum`.

Local Servers: blocking

Remote Servers: blocking

NetWare Server: 4.x, 5.x, 6.x

Platform: NLM, Windows NT, Windows 95, Windows 98

Library: Cross-Platform NetWare Calls (CAL*.*)

Service: Server Environment

Syntax

```
#include <nwfse.h>
or
#include <nwcalls.h>

NWCCODE N_API  NWGetLANConfigInfo
  (NWCONN_HANDLE                  conn,
   nuint32                         boardNum,
   NWFSE_LAN_CONFIG_INFO  N_FAR   *fseLANConfigInfo);
```

Delphi Syntax

```
uses calwin32

Function NWGetLANConfigInfo
  (conn : NWCONN_HANDLE;
   boardNum : nuint32;
   Var fseLANConfigInfo : NWFSE_LAN_CONFIG_INFO
) : NWCCODE;
```

Parameters

conn

   (IN) Specifies the NetWare server connection handle.

boardNum

   (IN) Specifies the number of the LAN board for which you want LAN driver information.

fseLANConfigInfo

   (OUT) Points to NWFSE_LAN_CONFIG_INFO returning LAN configuration information.

Return Values

These are common return values; see Return Values (*Return Values for C*) for more information.

0x0000	SUCCESSFUL
0x8801	INVALID_CONNECTION
0x890A	NLM_INVALID_CONNECTION
0x8979	ERR_NO_ITEMS_FOUND
0x897E	NCP_BOUNDARY_CHECK_FAILED
0x89C6	NO_CONSOLE_PRIVILEGES
0x89FF	Failure or Invalid Board Number

Remarks

To call NWGetLANConfigInfo, you must have console operator rights.

NCP Calls

0x2222 123 21 LAN Configuration Information

See Also

NWGetActiveLANBoardList (page 47), NWGetLANCommonCountersInfo (page 89), NWGetLANCustomCountersInfo (page 93), NWGetLSLLogicalBoardStats (page 99), NWGetProtocolStkNumsByLANBrdNum (page 139)

NWGetLANCustomCountersInfo

Returns custom statistics for a LAN board.

Local Servers: blocking

Remote Servers: blocking

NetWare Server: 4.x, 5.x, 6.x

Platform: NLM, Windows NT, Windows 95, Windows 98

Library: Cross-Platform NetWare Calls (CAL*.*)

Service: Server Environment

Syntax

```
#include <nwfse.h>
or
#include <nwcalls.h>

NWCCODE N_API  NWGetLANCustomCountersInfo
  (NWCONN_HANDLE                    conn,
   nuint32                          boardNum,
   nuint32                          startingNum,
   NWFSE_LAN_CUSTOM_INFO  N_FAR   *fseLANCustomInfo);
```

Delphi Syntax

```
uses calwin32

Function NWGetLANCustomCountersInfo
  (conn : NWCONN_HANDLE;
   boardNum : nuint32;
   startingNum : nuint32;
   Var fseLANCustomInfo : NWFSE_LAN_CUSTOM_INFO
) : NWCCODE;
```

Parameters

conn

    (IN) Specifies the NetWare server connection handle.

boardNum

    (IN) Specifies the board number returned by NWGetActiveLANBoardList.

startingNum

    (IN) Specifies the cumulative number of custom counters already returned; normally, zero (0) for the first call.

fseLANCustomInfo

(OUT) Points to NWFSE_LAN_CUSTOM_INFO returning information.

Return Values

These are common return values; see Return Values (*Return Values for C*) for more information.

0x0000	SUCCESSFUL
0x8801	INVALID_CONNECTION
0x890A	NLM_INVALID_CONNECTION
0x897E	NCP_BOUNDARY_CHECK_FAILED
0x89C6	NO_CONSOLE_PRIVILEGES
0x89FF	Failure or Invalid Start or Board Number

Remarks

To call NWGetLANCustomCountersInfo, you must have console operator rights.

NCP Calls

 0x2222 123 23 LAN Custom Counters Information

See Also

NWGetActiveLANBoardList (page 47), NWGetLANConfigInfo (page 91),
NWGetLANCommonCountersInfo (page 89), NWGetLSLLogicalBoardStats (page 99),
NWGetProtocolStkNumsByLANBrdNum (page 139)

NWGetLoadedMediaNumList

Returns a list of loaded media numbers.

Local Servers: blocking

Remote Servers: blocking

NetWare Server: 4.x, 5.x, 6.x

Platform: NLM, Windows NT, Windows 95, Windows 98

Library: Cross-Platform NetWare Calls (CAL*.*)

Service: Server Environment

Syntax

```
#include <nwfse.h>
or
#include <nwcalls.h>

NWCCODE N_API  NWGetLoadedMediaNumList  (
   NWCONN_HANDLE                         conn,
   NWFSE_LOADED_MEDIA_NUM_LIST  N_FAR   *fseLoadedMediaNumList);
```

Delphi Syntax

```
uses calwin32

Function NWGetLoadedMediaNumList
  (conn : NWCONN_HANDLE;
   Var fseLoadedMediaNumList : NWFSE_LOADED_MEDIA_NUM_LIST
) : NWCCODE;
```

Parameters

conn

(IN) Specifies the NetWare server connection handle.

fseLoadedMediaNumList

(OUT) Points to NWFSE_LOADED_MEDIA_NUM_LIST returning information.

Return Values

These are common return values; see Return Values (*Return Values for C*) for more information.

0x0000	SUCCESSFUL
0x8801	INVALID_CONNECTION
0x890A	NLM_INVALID_CONNECTION

0x897E	NCP_BOUNDARY_CHECK_FAILED
0x89C6	NO_CONSOLE_PRIVILEGES

Remarks

To call NWGetLoadedMediaNumList, you must have console operator rights.

NCP Calls

0x2222 123 47 Get Loaded Media Num List

See Also

NWGetLSLInfo

Returns LSL information.

Local Servers: blocking

Remote Servers: blocking

NetWare Server: 4.x, 5.x, 6.x

Platform: NLM, Windows NT, Windows 95, Windows 98

Library: Cross-Platform NetWare Calls (CAL*.*)

Service: Server Environment

Syntax

```
#include <nwfse.h>
or
#include <nwcalls.h>

NWCCODE N_API  NWGetLSLInfo  (
   NWCONN_HANDLE          conn,
   NWFSE_LSL_INFO  N_FAR  *fseLSLInfo);
```

Delphi Syntax

```
uses calwin32

Function NWGetLSLInfo
  (conn : NWCONN_HANDLE;
   Var fseLSLInfo : NWFSE_LSL_INFO
) : NWCCODE;
```

Parameters

conn

   (IN) Specifies the NetWare server connection handle.

fseLSLInfo

   (OUT) Points to NWFSE_LSL_INFO returning LSL™ information.

Return Values

These are common return values; see Return Values (*Return Values for C*) for more information.

0x0000	SUCCESSFUL
0x8801	INVALID_CONNECTION
0x890A	NLM_INVALID_CONNECTION

| 0x897E | NCP_BOUNDARY_CHECK_FAILED |
| 0x89C6 | NO_CONSOLE_PRIVILEGES |

Remarks

To call NWGetLSLInfo, you must have console operator rights.

NCP Calls

 0x2222 123 25 LSL Information

See Also

NWGetLSLLogicalBoardStats (page 99)

NWGetLSLLogicalBoardStats

Returns LSL logical board statistics.

Local Servers: blocking

Remote Servers: blocking

NetWare Server: 4.x, 5.x, 6.x

Platform: NLM, Windows NT, Windows 95, Windows 98

Library: Cross-Platform NetWare Calls (CAL*.*)

Service: Server Environment

Syntax

```
#include <nwfse.h>
or
#include <nwcalls.h>

NWCCODE N_API  NWGetLSLLogicalBoardStats (
   NWCONN_HANDLE                            conn,
   nuint32                                  LANBoardNum,
   NWFSE_LSL_LOGICAL_BOARD_STATS  N_FAR   *fseLSLLogicalBoardStats);
```

Delphi Syntax

```
uses calwin32

Function NWGetLSLLogicalBoardStats
  (conn : NWCONN_HANDLE;
   LANBoardNum : nuint32;
   Var fseLSLLogicalBoardStats : NWFSE_LSL_LOGICAL_BOARD_STATS
) : NWCCODE;
```

Parameters

conn

   (IN) Specifies the NetWare server connection handle.

LANBoardNum

   (IN) Specifies a board number returned by NWGetActiveLANBoardList.

fseLSLLogicalBoardStats

   (OUT) Points to NWFSE_LSL_LOGICAL_BOARD_STATS returning LSL logical board statistics.

Return Values

These are common return values; see Return Values (*Return Values for C*) for more information.

0x00000	SUCCESSFUL
0x8801	INVALID_CONNECTION
0x890A	NLM_INVALID_CONNECTION
0x897E	NCP_BOUNDARY_CHECK_FAILED
0x89C6	NO_CONSOLE_PRIVILEGES
0x89FB	ERR_NCP_NOT_SUPPORTED
0x89FF	Failure or Invalid LAN Board Number

Remarks

To call NWGetLSLLogicalBoardStats, you must have console operator rights.

NCP Calls

0x2222 123 26 LSL Logical Board Statistics

See Also

NWGetMediaMgrObjChildrenList

Returns a list of children belonging to a given media manager parent object.

Local Servers: blocking

Remote Servers: blocking

NetWare Server: 4.x, 5.x, 6.x

Platform: NLM, Windows NT, Windows 95, Windows 98

Library: Cross-Platform NetWare Calls (CAL*.*)

Service: Server Environment

Syntax

```
#include <nwfse.h>
or
#include <nwcalls.h>

NWCCODE N_API  NWGetMediaMgrObjChildrenList  (
   NWCONN_HANDLE                         conn,
   nuint32                               startNum,
   nuint32                               objType,
   nuint32                               parentObjNum,
   NWFSE_MEDIA_MGR_OBJ_LIST  N_FAR   *fseMediaMgrObjList);
```

Delphi Syntax

```
uses calwin32

Function NWGetMediaMgrObjChildrenList
   (conn : NWCONN_HANDLE;
   startNum : nuint32;
   objType : nuint32;
   parentObjNum : nuint32;
   Var fseMediaMgrObjList : NWFSE_MEDIA_MGR_OBJ_LIST
) : NWCCODE;
```

Parameters

conn

　　(IN) Specifies the NetWare server connection handle.

startNum

　　(IN) Specifies the value returned in `nextStartObjNum` of
　　NWFSE_MEDIA_MGR_OBJ_LIST; Normally, zero (0) on the first call.

objType

　　(IN) Specifies one of the types defined in nwfse.h, such as ADAPTER_OBJECT or
　　MIRROR_OBJECT.

parentObjNum

(IN) Specifies the parent object ID number such as one returned by NWGetMediaMgrObjList.

fseMediaMgrObjList

(OUT) Points to NWFSE_MEDIA_MGR_OBJ_LIST listing media manager object's children.

Return Values

These are common return values; see Return Values (*Return Values for C*) for more information.

0x0000	SUCCESSFUL
0x8979	Invalid Start Number, Object Type, or Parent Object Number
0x897E	NCP_BOUNDARY_CHECK_FAILED

Remarks

To call NWGetMediaMgrObjChildrenList, you must have console operator rights.

NCP Calls

0x2222 123 32 Get Media Manager Object Children's List

See Also

NWGetMediaMgrObjInfo

Returns information about media manager objects (storage devices).

Local Servers: blocking

Remote Servers: blocking

NetWare Server: 4.x, 5.x, 6.x

Platform: NLM, Windows NT, Windows 95, Windows 98

Library: Cross-Platform NetWare Calls (CAL*.*)

Service: Server Environment

Syntax

```
#include <nwfse.h>
or
#include <nwcalls.h>

NWCCODE N_API  NWGetMediaMgrObjInfo  (
   NWCONN_HANDLE                      conn,
   nuint32                            objNum,
   NWFSE_MEDIA_MGR_OBJ_INFO  N_FAR   *fseMediaMgrObjInfo);
```

Delphi Syntax

```
uses calwin32

Function NWGetMediaMgrObjInfo
  (conn : NWCONN_HANDLE;
   objNum : nuint32;
   Var fseMediaMgrObjInfo : NWFSE_MEDIA_MGR_OBJ_INFO
) : NWCCODE;
```

Parameters

conn

(IN) Specifies the NetWare server connection handle.

objNum

(IN) Specifies the object ID number returned by NWGetMediaMgrObjList representing the device you want information about.

fseMediaMgrObjInfo

(OUT) Points to NWFSE_MEDIA_MGR_OBJ_INFO returning media manager object information.

Return Values

These are common return values; see Return Values (*Return Values for C*) for more information.

0x0000	SUCCESSFUL
0x897E	NCP_BOUNDARY_CHECK_FAILED

Remarks

To call NWGetMediaMgrObjInfo, you must have console operator rights.

Media manager objects are storage devices which are managed by the OS in an object-oriented database to allow for the needs of current and future file system applications and storage applications.

NCP Calls

0x2222 123 30 Get Media Manager Object Information

See Also

NWGetLoadedMediaNumList (page 95), NWGetMediaMgrObjChildrenList (page 101), NWGetMediaMgrObjList (page 105), NWGetMediaNameByMediaNum (page 108), NWGetProtocolStkNumsByMediaNum (page 141)

NWGetMediaMgrObjList

Returns a list of media manager objects (storage devices) of the specified type.

Local Servers: blocking

Remote Servers: blocking

NetWare Server: 4.x, 5.x, 6.x

Platform: NLM, Windows NT, Windows 95, Windows 98

Library: Cross-Platform NetWare Calls (CAL*.*)

Service: Server Environment

Syntax

```
#include <nwfse.h>
or
#include <nwcalls.h>

NWCCODE N_API  NWGetMediaMgrObjList  (
   NWCONN_HANDLE                        conn,
   nuint32                              startNum,
   nuint32                              objType,
   NWFSE_MEDIA_MGR_OBJ_LIST  N_FAR   *fseMediaMgrObjList);
```

Delphi Syntax

```
uses calwin32

Function NWGetMediaMgrObjList
  (conn : NWCONN_HANDLE;
   startNum : nuint32;
   objType : nuint32;
   Var fseMediaMgrObjList : NWFSE_MEDIA_MGR_OBJ_LIST
) : NWCCODE;
```

Parameters

conn

(IN) Specifies the NetWare server connection handle.

startNum

(IN) Specifies the value returned in the `nextStartObjNum` field of the `fseMediaMgrObjList` parameter (set to -1 initially).

objType

(IN) Specifies the object type.

fseMediaMgrObjList

(OUT) Points to the NWFSE_MEDIA_MGR_OBJ_LIST structure listing media manager objects.

Return Values

These are common return values; see Return Values (*Return Values for C*) for more information.

0x0000	SUCCESSFUL
0x8979	Invalid Start Number or Object Type
0x897E	NCP_BOUNDARY_CHECK_FAILED

Remarks

To call NWGetMediaMgrObjList, you must have console operator rights.

Media manager objects are storage devices maintained by the media manager in an object-oriented database.

Object types are the following:

C Value	Delphi Value	Value Name
0	0	FSE_ADAPTER_OBJECT
1	1	FSE_CHANGER_OBJECT
2	2	FSE_DEVICE_OBJECT
4	4	FSE_MEDIA_OBJECT
5	5	FSE_PARTITION_OBJECT
6	6	FSE_SLOT_OBJECT
7	7	FSE_HOTFIX_OBJECT
8	8	FSE_MIRROR_OBJECT
9	9	FSE_PARITY_OBJECT
10	10	FSE_VOLUME_SEG_OBJECT
11	11	FSE_VOLUME_OBJECT
12	12	FSE_CLONE_OBJECT
14	14	FSE_MAGAZINE_OBJECT
15	15	FSE_VIRTUAL_DEVICE_OBJECT
0xFFFF	$FFFF	FSE_UNKNOWN_OBJECT

NCP Calls

0x2222 123 31 Get Media Manager Objects List

See Also

NWGetLoadedMediaNumList (page 95), NWGetMediaMgrObjInfo (page 103), NWGetMediaMgrObjChildrenList (page 101), NWGetMediaNameByMediaNum (page 108), NWGetProtocolStkNumsByMediaNum (page 141)

NWGetMediaNameByMediaNum

Returns the identifying name or label for the given media object.

Local Servers: blocking

Remote Servers: blocking

NetWare Server: 4.x, 5.x, 6.x

Platform: NLM, Windows NT, Windows 95, Windows 98

Library: Cross-Platform NetWare Calls (CAL*.*)

Service: Server Environment

Syntax

```
#include <nwfse.h>
or
#include <nwcalls.h>

NWCCODE N_API   NWGetMediaNameByMediaNum
  (NWCONN_HANDLE                    conn,
   nuint32                          mediaNum,
   pnstr8                           mediaName,
   NWFSE_MEDIA_NAME_LIST  N_FAR   *fseMediaNameList);
```

Delphi Syntax

```
uses calwin32

Function NWGetMediaNameByMediaNum
  (conn : NWCONN_HANDLE;
   mediaNum : nuint32;
   mediaName : pnstr8;
   Var fseMediaNameList : NWFSE_MEDIA_NAME_LIST
) : NWCCODE;
```

Parameters

conn

(IN) Specifies the NetWare server connection handle.

mediaNum

(IN) Specifies the object ID number of the target media object returned by calling either NWGetMediaMgrObjList or NWGetMediaMgrChildrenList.

mediaName

(OUT) Points to the name of the media object specified by `mediaNum`.

fseMediaNameList

(OUT) Points to NWFSE_MEDIA_NAME_LIST returning information.

Return Values

These are common return values; see Return Values (*Return Values for C*) for more information.

0x0000	SUCCESSFUL
0x897E	NCP_BOUNDARY_CHECK_FAILED

Remarks

To call NWGetMediaNameByMediaNum, you must have console operator rights.

`mediaName` requires a buffer at least as large as FSE_MEDIA_NAME_LEN_MAX +1. It can be longer than that if desired.

NCP Calls

0x2222 123 46 Get Media Name By Media Number

See Also

NWGetLoadedMediaNumList (page 95), NWGetMediaMgrObjInfo (page 103), NWGetMediaMgrObjChildrenList (page 101), NWGetMediaMgrObjList (page 105), NWGetProtocolStkNumsByMediaNum (page 141)

NWGetMLIDBoardInfo

Returns a list of and information for each Multiple Link Interface Driver (MLID) bound to a network board.

Local Servers: blocking

Remote Servers: blocking

NetWare Server: 4.x, 5.x, 6.x

Platform: NLM, Windows NT, Windows 95, Windows 98

Library: Cross-Platform NetWare Calls (CAL*.*)

Service: Server Environment

Syntax

```
#include <nwfse.h>
or
#include <nwcalls.h>

NWCCODE NWGetMLIDBoardInfo (
   NWCONN_HANDLE                 conn,
   nuint32                        MLIDBoardNum,
   NWFSE_MLID_BOARD_INFO N_FAR   *fseMLIDBoardInfo);
```

Delphi Syntax

```
uses calwin32

Function NWGetMLIDBoardInfo
   (conn : NWCONN_HANDLE;
   MLIDBoardNum : nuint32;
   var fseMLIDBoardInfo : NWFSE_MLID_BOARD_INFO
) : NWCCODE;
```

Parameters

conn

   (IN) Specifies the NetWare server connection handle.

MLIDBoardNum

   (IN) Specifies one of the board numbers returned by calling NWGetActiveLANBoardList.

fseMLIDBoardInfo

   (OUT) Points to NWFSE_MLID_BOARD_INFO, which contains the MLID list and information.

Return Values

These are common return values; see Return Values (*Return Values for C*) for more information.

0x0000	SUCCESSFUL
0x8801	INVALID_CONNECTION
0x897E	NCP_BOUNDARY_CHECK_FAILED
0c89C6	NO_CONSOLE_PRIVILEGES
0x89FF	Failure or Invalid LAN Board Number

Remarks

You must have CONSOLE privileges to call NWGetMLIDBoardInfo.

NWGetMLIDBoardInfo returns 0x89FF if no procotols are bound to the specified board.

NetWare 4.x returns only one protocol per board.

IMPORTANT: Some older versions of the Win32 DLLs do not include this function.

NCP Calls

0x2222 123 27 MLID Board Information

See Also

NWGetActiveLANBoardList (page 47)

NWGetNetWareFileSystemsInfo

Returns information about a loaded file system.

Local Servers: blocking

Remote Servers: blocking

NetWare Server: 4.x, 5.x, 6.x

Platform: NLM, Windows NT, Windows 95, Windows 98

Library: Cross-Platform NetWare Calls (CAL*.*)

Service: Server Environment

Syntax

```
#include <nwfse.h>
or
#include <nwcalls.h>

NWCCODE N_API  NWGetNetWareFileSystemsInfo  (
   NWCONN_HANDLE                    conn,
   NWFSE_FILE_SYSTEM_INFO  N_FAR   *fseFileSystemInfo);
```

Delphi Syntax

```
uses calwin32

Function NWGetNetWareFileSystemsInfo
  (conn : NWCONN_HANDLE;
   Var fseFileSystemInfo : NWFSE_FILE_SYSTEM_INFO
) : NWCCODE;
```

Parameters

conn

   (IN) Specifies the NetWare server connection handle.

fseFilesystemInfo

   (OUT) Points to NWFSE_FILE_SYSTEMS_INFO returning NetWare file systems
   information.

Return Values

These are common return values; see Return Values (*Return Values for C*) for more information.

0x0000	SUCCESSFUL
0x897E	NCP_BOUNDARY_CHECK_FAILED

Remarks

To call NWGetNetWareFileSystemsInfo, you must have console operator rights.

NCP Calls

0x2222 123 03 NetWare File Systems Information

NWGetNetWareProductVersion

Returns the NetWare product version.

Local Servers: blocking

Remote Servers: blocking

NetWare Server: 4.x, 5.x, 6.x

Platform: NLM, Windows NT, Windows 95, Windows 98

Library: Cross-Platform NetWare Calls (CAL*.*)

Service: Server Environment

Syntax

```
#include <nwserver.h>
or
#include <nwcalls.h>

NWCCODE N_API  NWGetNetWareProductVersion  (
   NWCONN_HANDLE                     conn,
   NETWARE_PRODUCT_VERSION  N_FAR   *version);
```

Delphi Syntax

```
uses calwin32

Function NWGetNetWareProductVersion
  (conn : NWCONN_HANDLE;
   Var version : NETWARE_PRODUCT_VERSION
) : NWCCODE;
```

Parameters

conn

   (IN) Specifies the NetWare server connection handle.

version

   (OUT) Points to the NETWARE_PRODUCT_VERSION structure, which contains the
   NetWare product version information.

Return Values

These are common return values; see Return Values (*Return Values for C*) for more information.

0x0000	SUCCESSFUL
0x8801	INVALID_CONNECTION

0x8836	INVALID_PARAMETER
0x890A	NLM_INVALID_CONNECTION
0x8996	SERVER_OUT_OF_MEMORY

Remarks

Console operator rights and an authenticated connection are NOT necessary to call NWGetNetWareProductVersion; you only need an attachment.

NWGetNetWareProductVersion supports all versions of NetWare servers, and is run on all supported platforms. Prior to NetWare 5.1, the version returned will be the OS version or the server version; however, starting with NetWare 5.1 these might not be the same because the OS does not always change with the release of a new product version of NetWare.

If you use the version command on the server console, the Novell NetWare version returned is equivalent to the product version (NetWare 5.1 and greater) or the OS version (prior to NetWare 5.1) returned from the NWGetNetWareProductVersion call. The Server Version returned from the version command on the server console is equivalent to the server version returned from the NWGetFileServerVersionInfo (page 74) call or the OS version returned from the NWGetOSVersionInfo (page 128) call. The server version and the OS version are the same.

NCP Calls

0x2222 23 17 Get File Server Information

NWGetNetworkRouterInfo

Returns information about network routing (other networks known to NetWare server).

Local Servers: blocking

Remote Servers: blocking

NetWare Server: 4.x, 5.x, 6.x

Platform: NLM, Windows NT, Windows 95, Windows 98

Library: Cross-Platform NetWare Calls (CAL*.*)

Service: Server Environment

Syntax

```
#include <nwfse.h>
or
#include <nwcalls.h>

NWCCODE N_API  NWGetNetworkRouterInfo  (
   NWCONN_HANDLE                        conn,
   nuint32                              networkNum,
   NWFSE_NETWORK_ROUTER_INFO  N_FAR   *fseNetworkRouterInfo);
```

Delphi Syntax

```
uses calwin32

Function NWGetNetworkRouterInfo
  (conn : NWCONN_HANDLE;
   networkNum : nuint32;
   Var fseNetworkRouterInfo : NWFSE_NETWORK_ROUTER_INFO
) : NWCCODE;
```

Parameters

conn

   (IN) Specifies the NetWare server connection handle.

networkNum

   (IN) Specifies the number of the network for which to return information.

fseNetworkRouterInfo

   (OUT) Points to NWFSE_NETWORK_ROUTER_INFO returning network router information.

Return Values

These are common return values; see Return Values (*Return Values for C*) for more information.

0x0000	SUCCESSFUL
0x8801	INVALID_CONNECTION
0x890A	NLM_INVALID_CONNECTION

Remarks

To call NWGetNetworkRouterInfo, you must have console operator rights.

NCP Calls

0x2222 123 51 Get Network Router Information

See Also

NWGetKnownNetworksInfo (page 85), NWGetNetworkRoutersInfo (page 118)

NWGetNetworkRoutersInfo

Returns information about the routers on a network.

Local Servers: blocking

Remote Servers: blocking

NetWare Server: 4.x, 5.x, 6.x

Platform: NLM, Windows NT, Windows 95, Windows 98

Library: Cross-Platform NetWare Calls (CAL*.*)

Service: Server Environment

Syntax

```
#include <nwfse.h>
or
#include <nwcalls.h>

NWCCODE N_API  NWGetNetworkRoutersInfo  (
   NWCONN_HANDLE                         conn,
   nuint32                               networkNum,
   nuint32                               startNum,
   NWFSE_NETWORK_ROUTERS_INFO  N_FAR   *fseNetworkRoutersInfo);
```

Delphi Syntax

```
uses calwin32

Function NWGetNetworkRoutersInfo
  (conn : NWCONN_HANDLE;
   networkNum : nuint32;
   startNum : nuint32;
   Var fseNetworkRoutersInfo : NWFSE_NETWORK_ROUTERS_INFO
) : NWCCODE;
```

Parameters

conn

   (IN) Specifies the NetWare server connection handle.

networkNum

   (IN) Specifies the number of the network for which to return information.

startNum

   (IN) Specifies the value returned in `numberOfEntries` in
   NWFSE_NETWORK_ROUTERS_INFO; normally, zero (0) on the first call.

fseNetworkRoutersInfo

(OUT) Points to NWFSE_NETWORK_ROUTERS_INFO returning network routers information.

Return Values

These are common return values; see Return Values (*Return Values for C*) for more information.

0x0000	SUCCESSFUL
0x8801	Invalid Network Number or Start Number
0x890A	NLM_INVALID_CONNECTION
0x897E	NCP_BOUNDARY_CHECK_FAILED

Remarks

To call NWGetNetworkRoutersInfo, you must have console operator rights.

NCP Calls

0x2222 123 52 Get Network Routers Information

See Also

NWGetKnownNetworksInfo (page 85), NWGetNetworkRouterInfo (page 116)

NWGetNetworkSerialNumber

Returns the NetWare server's serial number and the application number.

Local Servers: blocking

Remote Servers: blocking

NetWare Server: 3.11, 3.12, 3.2, 4.x, 5.x, 6.x

Platform: NLM, Windows NT, Windows 95, Windows 98

Library: Cross-Platform NetWare Calls (CAL*.*)

Service: Server Environment

Syntax

```
#include <nwserver.h>
or
#include <nwcalls.h>

NWCCODE N_API  NWGetNetworkSerialNumber  (
   NWCONN_HANDLE   conn,
   pnuint32        serialNum,
   pnuint16        appNum);
```

Delphi Syntax

```
uses calwin32

Function NWGetNetworkSerialNumber
  (conn : NWCONN_HANDLE;
   serialNum : pnuint32;
   appNum : pnuint16
) : NWCCODE;
```

Parameters

conn

   (IN) Specifies the NetWare server connection handle.

serialNum

   (OUT) Points to the NetWare server's serial number.

appNum

   (OUT) Points to the application number.

Return Values

These are common return values; see Return Values (*Return Values for C*) for more information.

0x0000	SUCCESSFUL
0x8801	INVALID_CONNECTION
0x890A	NLM_INVALID_CONNECTION
0x8996	SERVER_OUT_OF_MEMORY

Remarks

The combination of the server serial number and the application number is unique.

NCP Calls

0x2222 23 17 Get File Server Information
0x2222 23 18 Get Network Serial Number

NWGetNLMInfo

Returns information about a specific loaded NLM.

Local Servers: blocking

Remote Servers: blocking

NetWare Server: 4.x, 5.x, 6.x

Platform: NLM, Windows NT, Windows 95, Windows 98

Library: Cross-Platform NetWare Calls (CAL*.*)

Service: Server Environment

Syntax

```
#include <nwfse.h>
or
#include <nwcalls.h>

NWCCODE N_API  NWGetNLMInfo  (
   NWCONN_HANDLE            conn,
   nuint32                  NLMNum,
   pnstr8                   fileName,
   pnstr8                   NLMname,
   pnstr8                   copyright,
   NWFSE_NLM_INFO  N_FAR    *fseNLMInfo);
```

Delphi Syntax

```
uses calwin32

Function NWGetNLMInfo
  (conn : NWCONN_HANDLE;
   NLMNum : nuint32;
   fileName : pnstr8;
   NLMname : pnstr8;
   copyright : pnstr8;
   Var fseNLMInfo : NWFSE_NLM_INFO
) : NWCCODE;
```

Parameters

conn

    (IN) Specifies the NetWare server connection handle.

NLMNum

    (IN) Specifies the NLM ID number returned by NWGetNLMLoadedList.

fileName

    (OUT) Points to the name of the NLM file.

NLMName

(OUT) Points to a short description of the NLM.

copyright

(OUT) Points to the copyright string (optional).

fseNLMInfo

(OUT) Points to NWFSE_NLM_INFO.

Return Values

These are common return values; see Return Values (*Return Values for C*) for more information.

0x0000	SUCCESSFUL
0x897E	NCP_BOUNDARY_CHECK_FAILED
0x89C6	NO_CONSOLE_PRIVILEGES
0x89FF	Failure or Invalid NLM Number

Remarks

To call NWGetNLMInfo, you must have console operator rights.

NWGetNLMInfo should only be called for NLMs that have information in the buffer.

NCP Calls

0x2222 123 11 NLM Information

See Also

NWGetNLMLoadedList (page 124), NWGetNLMsResourceTagList (page 126)

NWGetNLMLoadedList

Returns a list of loaded NLM sequence numbers.

Local Servers: blocking

Remote Servers: blocking

NetWare Server: 4.x, 5.x, 6.x

Platform: NLM, Windows NT, Windows 95, Windows 98

Library: Cross-Platform NetWare Calls (CAL*.*)

Service: Server Environment

Syntax

```
#include <nwfse.h>
or
#include <nwcalls.h>

NWCCODE N_API  NWGetNLMLoadedList  (
   NWCONN_HANDLE                     conn,
   nuint32                           startNum,
   NWFSE_NLM_LOADED_LIST  N_FAR   *fseNLMLoadedList);
```

Delphi Syntax

```
uses calwin32

Function NWGetNLMLoadedList
  (conn : NWCONN_HANDLE;
   startNum : nuint32;
   Var fseNLMLoadedList : NWFSE_NLM_LOADED_LIST
) : NWCCODE;
```

Parameters

conn

   (IN) Specifies the NetWare server connection handle.

startNum

   (IN) Specifies the starting number (set to zero the first time NWGetNLMLoadedList is called).

fseNLMLoadedList

   (OUT) Points to the NWFSE_NLM_LOADED_LIST structure.

Return Values

These are common return values; see Return Values (*Return Values for C*) for more information.

0x0000	SUCCESSFUL
0x897E	NCP_BOUNDARY_CHECK_FAILED
0x89C6	NO_CONSOLE_PRIVILEGES
0x89FF	Failure

Remarks

To call NWGetNLMLoadedList, you must have console operator rights.

NWGetNLMLoadedList will only return information about 130 NLMs at a time. If you have more than 130 NLMs loaded, call NWGetNLMLoadedList iteratively and pass to `startNum` the number of the next NLM that you want to start the list with. For example:

```
fseNLMLoadedList->NLMNums[fseNLMLoadedList->NLMsInList]+1
```

NCP Calls

0x2222 123 10 Get NLM Loaded List

See Also

NWGetNLMsResourceTagList

Returns information about resources used by NLMs on a server.

Local Servers: blocking

Remote Servers: blocking

NetWare Server: 4.x, 5.x, 6.x

Platform: NLM, Windows NT, Windows 95, Windows 98

Library: Cross-Platform NetWare Calls (CAL*.*)

Service: Server Environment

Syntax

```
#include <nwfse.h>
or
#include <nwcalls.h>

NWCCODE N_API  NWGetNLMsResourceTagList  (
   NWCONN_HANDLE                          conn,
   nuint32                                NLMNum,
   nuint32                                startNum,
   NWFSE_NLMS_RESOURCE_TAG_LIST  N_FAR   *fseNLMsResourceTagList);
```

Delphi Syntax

```
uses calwin32

Function NWGetNLMsResourceTagList
  (conn : NWCONN_HANDLE;
   NLMNum : nuint32;
   startNum : nuint32;
   Var fseNLMsResourceTagList : NWFSE_NLMS_RESOURCE_TAG_LIST
) : NWCCODE;
```

Parameters

conn

   (IN) Specifies the NetWare server connection handle.

NLMNum

   (IN) Specifies the NLM ID number representing the NLM on the server, returned by
   NWGetNLMLoadedList.

startNum

   (IN) Specifies the previous `startNum`, plus the value in `packetResourceTags` of
   NWFSE_NLMS_RESOURCE_TAG_LIST; normally 0 (zero) on the first call.

fseNLMsResourceTagList

(OUT) Points to NWFSE_NLMS_RESOURCE_TAG_LIST.

Return Values

These are common return values; see Return Values (*Return Values for C*) for more information.

0x0000	SUCCESSFUL

Remarks

To call NWGetNLMsResourceTagList, you must have console operator rights.

NCP Calls

0x2222 123 15 Get NLM's Resource Tag List

See Also

NWGetNLMInfo (page 122), NWGetNLMLoadedList (page 124)

NWGetOSVersionInfo

Returns the NetWare OS version information.

Local Servers: blocking

Remote Servers: blocking

NetWare Server: 4.x, 5.x, 6.x

Platform: NLM, Windows NT, Windows 95, Windows 98

Library: Cross-Platform NetWare Calls (CAL*.*)

Service: Server Environment

Syntax

```
#include <nwfse.h>
or
#include <nwcalls.h>

NWCCODE N_API  NWGetOSVersionInfo  (
   NWCONN_HANDLE                    conn,
   NWFSE_OS_VERSION_INFO  N_FAR   *fseOSVersionInfo);
```

Delphi Syntax

```
uses calwin32

Function NWGetOSVersionInfo
  (conn : NWCONN_HANDLE;
   Var fseOSVersionInfo : NWFSE_OS_VERSION_INFO
) : NWCCODE;
```

Parameters

conn

   (IN) Specifies the NetWare server connection handle.

fseOSVersionInfo

   (OUT) Points to the NWFSE_OS_VERSION_INFO structure, which contains the operating system version information.

Return Values

These are common return values; see Return Values (*Return Values for C*) for more information.

0x0000	SUCCESSFUL

Remarks

Console operator rights and an authenticated connection are NOT necessary to call NWGetOSVersionInfo; you only need an attachment.

It is recommended that the newer function call, NWGetNetWareProductVersion (page 114), be used rather than NWGetOSVersionInfo.

NCP Calls

0x2222 123 13 Get Operating System Version Information

NWGetPacketBurstInfo

Returns the server's packet burst operational counters and statistics.

Local Servers: blocking

Remote Servers: blocking

NetWare Server: 4.x, 5.x, 6.x

Platform: NLM, Windows NT, Windows 95, Windows 98

Library: Cross-Platform NetWare Calls (CAL*.*)

Service: Server Environment

Syntax

```
#include <nwfse.h>
or
#include <nwcalls.h>

NWCCODE N_API  NWGetPacketBurstInfo  (
   NWCONN_HANDLE                    conn,
   NWFSE_PACKET_BURST_INFO  N_FAR   *fsePacketBurstInfo);
```

Delphi Syntax

```
uses calwin32

Function NWGetPacketBurstInfo
  (conn : NWCONN_HANDLE;
   Var fsePacketBurstInfo : NWFSE_PACKET_BURST_INFO
) : NWCCODE;
```

Parameters

conn

   (IN) Specifies the NetWare server connection handle.

fsePacketBurstInfo

   (OUT) Points to NWFSE_PACKET_BURST_INFO getting packet burst information.

Return Values

These are common return values; see Return Values (*Return Values for C*) for more information.

0x0000	SUCCESSFUL
0x897E	NCP_BOUNDARY_CHECK_FAILED

Remarks

To call NWGetPacketBurstInfo, you must have console operator rights.

NCP Calls

0x2222 123 05 Packet Burst Information

NWGetPhysicalDiskStats (obsolete-moved from .h file 6/99)

was last documented in Release 15 for NetWare 2.x only.

NWGetProtocolStackConfigInfo

Returns configuration information about the protocols on a server.

Local Servers: blocking

Remote Servers: blocking

NetWare Server: 4.x, 5.x, 6.x

Platform: NLM, Windows NT, Windows 95, Windows 98

Library: Cross-Platform NetWare Calls (CAL*.*)

Service: Server Environment

Syntax

```
#include <nwfse.h>
or
#include <nwcalls.h>

NWCCODE N_API  NWGetProtocolStackConfigInfo  (
   NWCONN_HANDLE                              conn,
   nuint32                                    stackNum,
   pnstr8                                     stackFullName,
   NWFSE_PROTOCOL_STK_CONFIG_INFO  N_FAR   *fseProtocolStkConfigInfo);
```

Delphi Syntax

```
uses calwin32

Function NWGetProtocolStackConfigInfo
  (conn : NWCONN_HANDLE;
   stackNum : nuint32;
   stackFullName : pnstr8;
   Var fseProtocolStkConfigInfo : NWFSE_PROTOCOL_STK_CONFIG_INFO
) : NWCCODE;
```

Parameters

conn

   (IN) Specifies the NetWare server connection handle.

stackNum

   (IN) Specifies the number of the protocol stack to return information about, usually returned by NWGetActiveProtocolStacks,

stackFullName

   (OUT) Points to the full description of the protocol stack.

fseProtocolStkConfigInfo

(OUT) Points to NWFSE_PROTOCOL_STK_CONFIG_INFO getting protocol stack configuration information.

Return Values

These are common return values; see Return Values (*Return Values for C*) for more information.

0x0000	SUCCESSFUL
0x897E	NCP_BOUNDARY_CHECK_FAILED
0x89FF	Failure

Remarks

To call NWGetProtocolStackConfigInfo, you must have console operator rights.

NCP Calls

0x2222 123 41 Get Protocol Stack Configuration Information

See Also

NWGetActiveProtocolStacks (page 49), NWGetProtocolStackCustomInfo (page 135), NWGetProtocolStackStatsInfo (page 137), NWGetProtocolStkNumsByLANBrdNum (page 139), NWGetProtocolStkNumsByMediaNum (page 141)

NWGetProtocolStackCustomInfo

Returns custom information about a protocol stack on a server.

Local Servers: blocking

Remote Servers: blocking

NetWare Server: 4.x, 5.x, 6.x

Platform: NLM, Windows NT, Windows 95, Windows 98

Library: Cross-Platform NetWare Calls (CAL*.*)

Service: Server Environment

Syntax

```
#include <nwfse.h>
or
#include <nwcalls.h>

NWCCODE N_API  NWGetProtocolStackCustomInfo  (
   NWCONN_HANDLE                           conn,
   nuint32                                 stackNum,
   nuint32                                 customStartNum,
   NWFSE_PROTOCOL_CUSTOM_INFO  N_FAR   *fseProtocolStackCustomInfo);
```

Delphi Syntax

```
uses calwin32

Function NWGetProtocolStackCustomInfo
  (conn : NWCONN_HANDLE;
   stackNum : nuint32;
   customStartNum : nuint32;
   Var fseProtocolStackCustomInfo : NWFSE_PROTOCOL_CUSTOM_INFO
) : NWCCODE;
```

Parameters

conn

   (IN) Specifies the NetWare server connection handle.

stackNum

   (IN) Specifies the number identifying the protocol stack to return information about, usually returned by NWGetActiveProtocolStacks.

customStartNum

   (IN) Specifies the custom information to begin with. Normally zero (0) on the first call; on all subsequent call, the previous `customStartNum`, plus the value returned in `customCount` of NWFSE_PROTOCOL_CUSTOM_INFO.

fseProtocolStackCustomInfo

    (OUT) Points to NWFSE_PROTOCOL_CUSTOM_INFO getting protocol stack custom information.

Return Values

These are common return values; see Return Values (*Return Values for C*) for more information.

0x0000	SUCCESSFUL
0x897E	NCP_BOUNDARY_CHECK_FAILED
0x89FF	Failure

Remarks

To call NWGetProtocolStackCustomInfo, you must have console operator rights.

NCP Calls

0x2222 123 43 Get Protocol Stack Custom Information

See Also

NWGetActiveProtocolStacks (page 49), NWGetProtocolStackConfigInfo (page 133), NWGetProtocolStackStatsInfo (page 137), NWGetProtocolStkNumsByLANBrdNum (page 139), NWGetProtocolStkNumsByMediaNum (page 141)

NWGetProtocolStackStatsInfo

Returns the protocol statistics indicated by `stackNum` for a server.

Local Servers: blocking

Remote Servers: blocking

NetWare Server: 4.x, 5.x, 6.x

Platform: NLM, Windows NT, Windows 95, Windows 98

Library: Cross-Platform NetWare Calls (CAL*.*)

Service: Server Environment

Syntax

```
#include <nwfse.h>
or
#include <nwcalls.h>

NWCCODE N_API  NWGetProtocolStackStatsInfo  (
   NWCONN_HANDLE                           conn,
   nuint32                                 stackNum,
   NWFSE_PROTOCOL_STK_STATS_INFO  N_FAR   *fseProtocolStkStatsInfo);
```

Delphi Syntax

```
uses calwin32

Function NWGetProtocolStackStatsInfo
  (conn : NWCONN_HANDLE;
   stackNum : nuint32;
   Var fseProtocolStkStatsInfo : NWFSE_PROTOCOL_STK_STATS_INFO
) : NWCCODE;
```

Parameters

conn

> (IN) Specifies the NetWare server connection handle.

stackNum

> (IN) Specifies the number identifying the protocol stack to return information about, usually returned by NWGetActiveProtocolStacks.

fseProtocolStkStatsInfo

> (OUT) Points to NWFSE_PROTOCOL_STK_STATS_INFO getting protocol stack configuration information.

Return Values

These are common return values; see Return Values (*Return Values for C*) for more information.

0x0000	SUCCESSFUL
0x897E	NCP_BOUNDARY_CHECK_FAILED
0x89C6	NO_CONSOLE_PRIVILEGES
0x89FF	Failure

Remarks

To call NWGetProtocolStackStatsInfo, you must have console operator rights.

NCP Calls

0x2222 123 42 Get Protocol Stack Statistics Information

See Also

NWGetActiveProtocolStacks (page 49), NWGetProtocolStackConfigInfo (page 133), NWGetProtocolStackCustomInfo (page 135), NWGetProtocolStkNumsByLANBrdNum (page 139), NWGetProtocolStkNumsByMediaNum (page 141)

NWGetProtocolStkNumsByLANBrdNum

Returns a list of protocol stack ID numbers for a given LAN board.

Local Servers: blocking

Remote Servers: blocking

NetWare Server: 4.x, 5.x, 6.x

Platform: NLM, Windows NT, Windows 95, Windows 98

Library: Cross-Platform NetWare Calls (CAL*.*)

Service: Server Environment

Syntax

```
#include <nwfse.h>
or
#include <nwcalls.h>

NWCCODE N_API  NWGetProtocolStkNumsByLANBrdNum  (
   NWCONN_HANDLE                    conn,
   nuint32                          LANBoardNum,
   NWFSE_PROTOCOL_ID_NUMS  N_FAR   *fseProtocolStkIDNums);
```

Delphi Syntax

```
uses calwin32

Function NWGetProtocolStkNumsByLANBrdNum
  (conn : NWCONN_HANDLE;
   LANBoardNum : nuint32;
   Var fseProtocolStkIDNums : NWFSE_PROTOCOL_ID_NUMS
) : NWCCODE;
```

Parameters

conn

(IN) Specifies the NetWare server connection handle.

LANBoardNum

(IN) Specifies the ID number of the LAN board for which you want a list of protocols; normally an ID number returned by NWGetActiveLANBoardList.

fseProtocolStkIDNums

(OUT) Points to NWFSE_PROTOCOL_ID_NUMS getting protocol stack numbers by LAN board number.

Return Values

These are common return values; see Return Values (*Return Values for C*) for more information.

0x0000	SUCCESSFUL
0x8801	INVALID_CONNECTION
0x890A	NLM_INVALID_CONNECTION
0x897E	NCP_BOUNDARY_CHECK_FAILED
0x89C6	NO_CONSOLE_PRIVILEGES
0x89FF	Failure

Remarks

To call NWGetProtocolStkNumsByLANBrdNum, you must have console operator rights.

NCP Calls

0x2222 123 45 Get Protocol Stack Numbers By LAN Board Number

See Also

NWGetActiveLANBoardList (page 47), NWGetActiveProtocolStacks (page 49), NWGetProtocolStackConfigInfo (page 133), NWGetProtocolStackCustomInfo (page 135), NWGetProtocolStackStatsInfo (page 137), NWGetProtocolStkNumsByMediaNum (page 141)

NWGetProtocolStkNumsByMediaNum

Returns a list of protocol stack ID numbers for a given media.

Local Servers: blocking

Remote Servers: blocking

NetWare Server: 4.x, 5.x, 6.x

Platform: NLM, Windows NT, Windows 95, Windows 98

Library: Cross-Platform NetWare Calls (CAL*.*)

Service: Server Environment

Syntax

```
#include <nwfse.h>
or
#include <nwcalls.h>

NWCCODE N_API  NWGetProtocolStkNumsByMediaNum  (
   NWCONN_HANDLE                      conn,
   nuint32                            mediaNum,
   NWFSE_PROTOCOL_ID_NUMS  N_FAR   *fseProtocolStkIDNums);
```

Delphi Syntax

```
uses calwin32

Function NWGetProtocolStkNumsByMediaNum
  (conn : NWCONN_HANDLE;
   mediaNum : nuint32;
   Var fseProtocolStkIDNums : NWFSE_PROTOCOL_ID_NUMS
) : NWCCODE;
```

Parameters

conn

   (IN) Specifies the NetWare server connection handle.

mediaNum

   (IN) Specifies the ID number representing the frame type used by the protocol.

fseProtocolStkIDNums

   (OUT) Points to NWFSE_PROTOCOL_ID_NUMS getting protocol stack numbers by media number.

Return Values

These are common return values; see Return Values (*Return Values for C*) for more information.

0x0000	SUCCESSFUL
0x8801	INVALID_CONNECTION
0x890A	NLM_INVALID_CONNECTION
0x897E	NCP_BOUNDARY_CHECK_FAILED
0x89C6	NO_CONSOLE_PRIVILEGES

An invalid media number can abend the server

Remarks

To call NWGetProtocolStkNumsByMediaNum, you must have console operator rights.

NCP Calls

0x2222 123 44 Get Protocol Stack Number By Media Number

See Also

NWGetActiveProtocolStacks (page 49), NWGetLoadedMediaNumList (page 95), NWGetProtocolStackConfigInfo (page 133), NWGetProtocolStackCustomInfo (page 135), NWGetProtocolStackStatsInfo (page 137), NWGetProtocolStkNumsByLANBrdNum (page 139)

NWGetServerConnInfo

Returns connection information in a NetWare server for a given connection number.

Local servers: blocking

Remote servers:

NetWare Server: 5.x, 6.x

Platform: NLM, Windows 95, Windows NT

Library: Cross-Platform NetWare Calls (CAL*.*)

Service: Server Environment

Syntax

```
#include <nwfse.h>
or
#include <nwcalls.h>

int NWGetServerConnInfo (
   NWCONN_HANDLE                        conn,
   nuint32                              retInfoMask,
   nuint32                              connectionNumber,
   SERVER_AND_VCONSOLE_INFO N_FAR    *serverTimeAndVConsoleInfo,
   puint16                              reserved,
   NWFSE_NETWORK_ADDRESS N_FAR       *networkAddress,
   NWFSE_LOGIN_TIME N_FAR            *loginTime,
   NWFSE_LOGIN_NAME N_FAR            *loginName,
   NWFSE_LOCK_INFO N_FAR             *lockInfo,
   NWFSE_PRINT_INFO N_FAR            *printInfo,
   NWFSE_STATS_INFO N_FAR            *statsInfo,
   NWFSE_ACCT_INFO N_FAR             *acctInfo,
   NWFSE_AUTH_INFO N_FAR             *authInfo);
```

Delphi Syntax

```
uses calwin32

Function NWGetServerConnInfo
   (conn : NWCONN_HANDLE;
   retInfoMask : nuint32;
   connectionNumber : nuint32;
   Var serverTimeAndVConsoleInfo : SERVER_AND_VCONSOLE_INFO;
   reserved : pnuint16;
   Var networkAddress : NWFSE_NETWORK_ADDRESS;
   Var loginTime : NWFSE_LOGIN_TIME;
   Var loginName : NWFSE_LOGIN_NAME;
   Var lockinfo : NWFSE_LOCK_INFO;
   Var printInfo : NWFSE_PRINT_INFO;
   Var statusInfo : NWFSE_STATS_INFO;
   Var acctInfo : NWFSE_ACCT_INFO;
```

```
   Var authInfo : NWFSE_AUTH_INFO
) : NWCCODE;
```

Parameters

conn

> (IN) Specifies the NetWare server connection handle.

retInfoMask

> (IN) Specifies the connection information to be returned.

connectionNumber

> (IN) Specifies the number of a connection to return information for.

serverTimeAndVConsoleInfo

> (OUT) Points to SERVER_AND_VCONSOLE_INFO, which contains the console and server versions.

reserved

> Is reserved for future use.

networkAddress

> (OUT) Points to NWFSE_NETWORK_ADDRESS, which contains information about the connection address.

loginTime

> (OUT) Points to NWFSE_LOGIN_TIME, which contains the server login time.

loginName

> (OUT) Points to NWFSE_LOGIN_NAME, which contains the login name for the server.

lockInfo

> (OUT) Points to NWFSE_LOCK_INFO, which contains information about the logical and record locks of the server.

printInfo

> (OUT) Points to NWFSE_PRINT_INFO, which contains the printing information.

statsInfo

> (OUT) Points to NWFSE_STATS_INFO, which contains statistical information about the server.

acctInfo

> (OUT) Points to NWFSE_ACCT_INFO, which contains accounting information about the server.

authInfo

> (OUT) Points to NWFSE_AUTH_INFO, which contains authentication information about the server.

Return Values

These are common return values; see Return Values (*Return Values for C*) for more information.

0x0000	SUCCESSFUL
0x8801	INVALID_CONNECTION
0x880E	NWE_BUFFER_OVERFLOW
0x8977	NEW_BUFFER_TOO_SMALL
0x897E	NCP_BOUNDARY_CHECK_FAILED

Remarks

Before calling NWGetServerConnInfo, allocate memory for the address pointer used in NWFSE_NETWORK_ADDRESS and set the `addressSize` field to a valid value.

If the passed in `addressSize` value is smaller than expected, `addressSize` is set to the required value and NWGetServerConnInfo returns NWE_BUFFER_OVERFLOW.

WARNING: If memory isn't allocated and invalid information is passed to `networkAddress`, the server might abend.

`retInfoMask` can have the following values (all can be ORed with the exception of CONN_INFO_ALL_MASK):

Value	Delphi	Definition
0x00000001	$00000001	CONN_INFO_TRANS_MASK specifies to return NWFSE_NETWORK_ADDRESS (page 264).
0x00000002	$00000002	CONN_INFO_LOGIN_TIME_MASK specifies to return NWFSE_LOGIN_TIME (page 255).
0x00000004	$00000004	CONN_INFO_LOGIN_NAME_MASK specifies to return NWFSE_LOGIN_NAME (page 254).
0x00000008	$00000008	CONN_INFO_LOCK_MASK specifies to return NWFSE_LOCK_INFO (page 253).
0x00000010	$00000010	CONN_INFO_PRINT_MASK specifies to return NWFSE_PRINT_INFO (page 276).
0x00000020	$00000020	CONN_INFO_STATS_MASK specifies to return NWFSE_STATS_INFO (page 289).
0x00000040	$00000040	CONN_INFO_ACCT_MASK specifies to return NWFSE_ACCT_INFO (page 226).
0x00000080	$00000080	CONN_INFO_AUTH_MASK specifies to return NWFSE_AUTH_INFO (page 233).
0xFFFFFFFF		CONN_INFO_ALL_MASK specifies that all structures are to be returned.

NCP Calls

0x2222 123 16 Enumerate Connection Information from Connection List

NWGetServerInfo

Returns the address and the number of hops to the server specified by `serverName` in relation to the server represented by `conn`.

Local Servers: blocking

Remote Servers: blocking

NetWare Server: 4.x, 5.x, 6.x

Platform: NLM, Windows NT, Windows 95, Windows 98

Library: Cross-Platform NetWare Calls (CAL*.*)

Service: Server Environment

Syntax

```
#include <nwfse.h>
or
#include <nwcalls.h>

NWCCODE N_API NWGetServerInfo (
   NWCONN_HANDLE            conn,
   nuint32                  serverType,
   const nstr8 N_FAR       *serverName,
   NWFSE_SERVER_INFO N_FAR  *fseServerInfo);
```

Delphi Syntax

```
uses calwin32

Function NWGetServerInfo
  (conn : NWCONN_HANDLE;
   serverType : nuint32;
   const serverName : pnstr8;
   Var fseServerInfo : NWFSE_SERVER_INFO
) : NWCCODE;
```

Parameters

conn

   (IN) Specifies the NetWare server connection handle.

serverType

   (IN) Specifies the type of server to search for, such as a file server (0x0400).

serverName

   (IN) Points to the name of the server for which to search.

fseServerInfo

(OUT) Points to NWFSE_SERVER_INFO containing server information.

Return Values

These are common return values; see Return Values (*Return Values for C*) for more information.

0x0000	SUCCESSFUL
0x8801	Invalid Server Name
0x8901	Invalid Server Type
0x890A	NLM_INVALID_CONNECTION
0x897E	NCP_BOUNDARY_CHECK_FAILED
0x89C6	NO_CONSOLE_PRIVILEGES
0x89FB	INVALID_PARAMETERS

Remarks

To call NWGetServerInfo, you must have console operator rights to the 4.x server indicated by `conn`. `serverType` can indicate either a 3.x or 4.x server.

NCP Calls

0x2222 123 54 Get Server Information

See Also

NWGetServerSourcesInfo (page 153)

NWGetServerSetCategories

Returns SET console command configuration parameter categories for the server.

Local Servers: blocking

Remote Servers: blocking

NetWare Server: 4.x, 5.x, 6.x

Platform: NLM, Windows NT, Windows 95, Windows 98

Library: Cross-Platform NetWare Calls (CAL*.*)

Service: Server Environment

Syntax

```
#include <nwfse.h>
or
#include <nwcalls.h>

NWCCODE N_API  NWGetServerSetCategories  (
   NWCONN_HANDLE                          conn,
   nuint32                                startNum,
   NWFSE_SERVER_SET_CATEGORIES  N_FAR   *fseServerSetCategories);
```

Delphi Syntax

```
uses calwin32

Function NWGetServerSetCategories
  (conn : NWCONN_HANDLE;
   startNum : nuint32;
   Var fseServerSetCategories : NWFSE_SERVER_SET_CATEGORIES
) : NWCCODE;
```

Parameters

conn

 (IN) Specifies the NetWare server connection handle.

startNum

 (IN) Specifies the value returned in `nextSequenceNumber` of
 `fseServerSetCategories`; normally zero (0) on the first call.

fseServerSetCategories

 (OUT) Points to NWFSE_SERVER_SET_CATEGORIES getting server set categories.

Return Values

These are common return values; see Return Values (*Return Values for C*) for more information.

0x0000	SUCCESSFUL
0x897E	NCP_BOUNDARY_CHECK_FAILED
0x89F5	Invalid Star Number

Remarks

To call NWGetServerSetCategories, you must have console operator rights.

NCP Calls

0x2222 123 61 Get Server Set Categories

See Also

NWGetServerSetCommandsInfo (page 151), NWSMSetDynamicCmdIntValue (page 349), NWSMSetDynamicCmdStrValue (page 351)

NWGetServerSetCommandsInfo

Returns SET console command configuration parameter commands for the server.

Local Servers: blocking

Remote Servers: blocking

NetWare Server: 4.x, 5.x, 6.x

Platform: NLM, Windows NT, Windows 95, Windows 98

Library: Cross-Platform NetWare Calls (CAL*.*)

Service: Server Environment

Syntax

```
#include <nwfse.h>
or
#include <nwcalls.h>

NWCCODE N_API  NWGetServerSetCommandsInfo  (
   NWCONN_HANDLE                        conn,
   nuint32                              startNum,
   NWFSE_SERVER_SET_CMDS_INFO  N_FAR  *fseServerSetCmdsInfo);
```

Delphi Syntax

```
uses calwin32

Function NWGetServerSetCommandsInfo
   (conn : NWCONN_HANDLE;
    startNum : nuint32;
    Var fseServerSetCmdsInfo : NWFSE_SERVER_SET_CMDS_INFO
) : NWCCODE;
```

Parameters

conn

   (IN) Specifies the NetWare server connection handle.

startNum

   (IN) Specifies the value returned in `nextSequenceNumber` of
   `fseServerSetCmdsInfo` ; normally zero (0) on the first call.

fseServerSetCmdsInfo

   (OUT) Points to NWFSE_SERVER_SET_CMDS_INFO getting server set commands
   information.

Return Values

These are common return values; see Return Values (*Return Values for C*) for more information.

0x0000	SUCCESSFUL
0x897E	NCP_BOUNDARY_CHECK_FAILED
0x89FF	Failure of Invalid Start Number

Remarks

To call NWGetServerSetCommandsInfo, you must have console operator rights.

NCP Calls

0x2222 123 60 Get Server Set Commands Information

See Also

NWGetServerSetCategories (page 149), NWSMSetDynamicCmdIntValue (page 349), NWSMSetDynamicCmdStrValue (page 351)

NWGetServerSourcesInfo

Returns address information about servers known to a server with a given name.

Local Servers: blocking

Remote Servers: blocking

NetWare Server: 4.x, 5.x, 6.x

Platform: NLM, Windows NT, Windows 95, Windows 98

Library: Cross-Platform NetWare Calls (CAL*.*)

Service: Server Environment

Syntax

```
#include <nwfse.h>
or
#include <nwcalls.h>

NWCCODE N_API NWGetServerSourcesInfo (
   NWCONN_HANDLE                  conn,
   nuint32                        startNum,
   nuint32                        serverType,
   const nstr8 N_FAR         *serverName,
   NWFSE_SERVER_SRC_INFO N_FAR   *fseServerSrcInfo);
```

Delphi Syntax

```
uses calwin32

Function NWGetServerSourcesInfo
  (conn : NWCONN_HANDLE;
   startNum : nuint32;
   serverType : nuint32;
   const serverName : pnstr8;
   Var fseServerSrcInfo : NWFSE_SERVER_SRC_INFO
) : NWCCODE;
```

Parameters

conn

   (IN) Specifies the NetWare server connection handle.

startNum

   (IN) Specifies the value returned in `numberOfEntries` of `fseServerSrcInfo`; normally zero (0) on the first call.

serverType

   (IN) Specifies the server type to get information from, such as a file server (0x0400).

serverName

(IN) Points to the server name to get information from.

fseServerSetCmdsInfo

(OUT) Points to NWFSE_SERVER_SRC_INFO getting server sources information.

Return Values

These are common return values; see Return Values (*Return Values for C*) for more information.

0x0000	SUCCESSFUL
0x8801	Invalid Server Name or Server Type
0x890A	NLM_INVALID_CONNECTION
0x897E	NCP_BOUNDARY_CHECK_FAILED

Remarks

To call NWGetServerSourcesInfo, you must have console operator rights.

NCP Calls

0x2222 123 55 Get Server Sources Information

See Also

NWGetServerInfo (page 147)

NWGetUserInfo

Gets NetWare user information about a given logged-in server connection.

Local Servers: blocking

Remote Servers: blocking

NetWare Server: 4.x, 5.x, 6.x

Platform: NLM, Windows NT, Windows 95, Windows 98

Library: Cross-Platform NetWare Calls (CAL*.*)

Service: Server Environment

Syntax

```
#include <nwfse.h>
or
#include <nwcalls.h>

NWCCODE N_API  NWGetUserInfo  (
   NWCONN_HANDLE              conn,
   nuint32                    connNum,
   pnstr8                     userName,
   NWFSE_USER_INFO  N_FAR   *fseUserInfo);
```

Delphi Syntax

```
uses calwin32

Function NWGetUserInfo
  (conn : NWCONN_HANDLE;
   connNum : nuint32;
   userName : pnstr8;
   Var fseUserInfo : NWFSE_USER_INFO
) : NWCCODE;
```

Parameters

conn

   (IN) Specifies the NetWare server connection handle.

connNum

   (IN) Specifies the connection number of logged-in user.

userName

   (OUT) Points to the user name (size of MAX_DN_BYTES).

fseServerSetCmdsInfo

   (OUT) Points to NWFSE_USER_INFO getting user information.

Return Values

These are common return values; see Return Values (*Return Values for C*) for more information.

0x0000	SUCCESSFUL
0x897E	NCP_BOUNDARY_CHECK_FAILED
0x89FF	Failure or Invalid Connection Number

Remarks

To call NWGetUserInfo, you must have console operator rights.

NCP Calls

0x2222 123 04 User Information

See Also

NWCCGetAllConnInfo, NWGetActiveConnListByType (page 45), NWGetConnectionInformation

NWGetVolumeInfoByLevel

Returns information about the specified volume, returning different structures depending on the `infoLevel` specified.

Local Servers: blocking

Remote Servers: blocking

NetWare Server: 4.x, 5.x, 6.x

Platform: NLM, Windows NT, Windows 95, Windows 98

Library: Cross-Platform NetWare Calls (CAL*.*)

Service: Server Environment

Syntax

```
#include <nwfse.h>
or
#include <nwcalls.h>

NWCCODE N_API  NWGetVolumeInfoByLevel  (
   NWCONN_HANDLE                         conn,
   nuint32                               volNum,
   nuint32                               infoLevel,
   NWFSE_VOLUME_INFO_BY_LEVEL  N_FAR   *fseVolumeInfo);
```

Delphi Syntax

```
uses calwin32

Function NWGetVolumeInfoByLevel
  (conn : NWCONN_HANDLE;
   volNum : nuint32;
   infoLevel : nuint32;
   Var fseVolumeInfo : NWFSE_VOLUME_INFO_BY_LEVEL
) : NWCCODE;
```

Parameters

conn

(IN) Specifies the NetWare server connection handle.

volNum

(IN) Specifies the volume number for which information is being obtained.

infoLevel

(IN) Specifies which level of information to return (1 or 2).

fseVolumeInfo

(OUT) Points to NWFSE_VOLUME_INFO_BY_LEVEL containing the information.

Return Values

These are common return values; see Return Values (*Return Values for C*) for more information.

0x0000	SUCCESSFUL
0x8801	INVALID_CONNECTION
0x890A	NLM_INVALID_CONNECTION
0x897E	NCP_BOUNDARY_CHECK_FAILED
0x8998	VOLUME_DOES_NOT_EXIST
0x89FF	Failure

Remarks

Console operator rights are NOT necessary to call NWGetVolumeInfoByLevel.

NCP Calls

0x2222 123 34 Get Volume Information By Level

See Also

NWGetVolumeInfoWithHandle, NWGetVolumeInfoWithNumber (Volume Management)

NWGetVolumeSegmentList

Returns a list of up to 32 volume segments for a given volume.

Local Servers: blocking

Remote Servers: blocking

NetWare Server: 4.x, 5.x, 6.x

Platform: NLM, Windows NT, Windows 95, Windows 98

Library: Cross-Platform NetWare Calls (CAL*.*)

Service: Server Environment

Syntax

```
#include <nwfse.h>
or
#include <nwcalls.h>

NWCCODE N_API  NWGetVolumeSegmentList  (
   NWCONN_HANDLE                      conn,
   nuint32                            volumeNum,
   NWFSE_VOLUME_SEGMENT_LIST  N_FAR   *fseVolumeSegmentList);
```

Delphi Syntax

```
uses calwin32

Function NWGetVolumeSegmentList
  (conn : NWCONN_HANDLE;
   volNum : nuint32;
   Var fseVolumeSegmentList : NWFSE_VOLUME_SEGMENT_LIST
) : NWCCODE;
```

Parameters

conn

   (IN) Specifies the NetWare server connection handle.

volumeNum

   (IN) Specifies the number representing a specific volume. Zero (0) = Volume SYS

fseVolumeSegmentList

   (OUT) Points to NWFSE_VOLUME_SEGMENT_LIST containing the volume segment list.

Return Values

These are common return values; see Return Values (*Return Values for C*) for more information.

0x0000	SUCCESSFUL
0x8801	INVALID_CONNECTION
0x890A	NLM_INVALID_CONNECTION
0x897E	NCP_BOUNDARY_CHECK_FAILED
0x8998	VOLUME_DOES_NOT_EXIST

Remarks

Console operator rights are NOT necessary to call NWGetVolumeSegmentList.

NCP Calls

0x2222 123 33 Get Volume Segment List

NWGetVolumeSwitchInfo

Gets information about the volume switch counter such as the number of overall times through the function.

Local Servers: blocking

Remote Servers: blocking

NetWare Server: 4.x, 5.x, 6.x

Platform: NLM, Windows NT, Windows 95, Windows 98

Library: Cross-Platform NetWare Calls (CAL*.*)

Service: Server Environment

Syntax

```
#include <nwfse.h>
or
#include <nwcalls.h>

NWCCODE N_API  NWGetVolumeSwitchInfo  (
   NWCONN_HANDLE                        conn,
   nuint32                              startNum,
   NWFSE_VOLUME_SWITCH_INFO  N_FAR   *fseVolumeSwitchInfo);
```

Delphi Syntax

```
uses calwin32

Function NWGetVolumeSwitchInfo
  (conn : NWCONN_HANDLE;
   startNum : nuint32;
   Var fseVolumeSwitchInfo : NWFSE_VOLUME_SWITCH_INFO
) : NWCCODE;
```

Parameters

conn

   (IN) Specifies the NetWare server connection handle.

startNum

   (IN) Specifies the starting number; set to zero (0) on the first call.

fseVolumeSwitchInfo

   (OUT) Points to NWFSE_VOLUME_SWITCH_INFO getting volume switch information.

Return Values

These are common return values; see Return Values (*Return Values for C*) for more information.

0x0000	SUCCESSFUL
0x897E	NCP_BOUNDARY_CHECK_FAILED
0x89FF	Failure or Invalid Start Item Number

Remarks

To call NWGetVolumeSwitchInfo, you must have console operator rights.

NCP Calls

0x2222 123 09 Volume Switch Information

NWIsManager

Checks whether a calling station is a manager.

Local Servers: blocking

Remote Servers: blocking

NetWare Server: 3.11, 3.12, 3.2, 4.x, 5.x, 6.x

Platform: NLM, Windows NT, Windows 95, Windows 98

Library: Cross-Platform NetWare Calls (CAL*.*)

Service: Server Environment

Syntax

```
#include <nwserver.h>
or
#include <nwcalls.h>

NWCCODE N_API  NWIsManager  (
   NWCONN_HANDLE   conn);
```

Delphi Syntax

```
uses calwin32

Function NWIsManager
  (conn : NWCONN_HANDLE
) : NWCCODE;
```

Parameters

conn

   (IN) Specifies the NetWare server connection handle.

Return Values

These are common return values; see Return Values (*Return Values for C*) for more information.

0x0000	Calling station is a manager.
0x89FF	Calling station is not a manager.

Remarks

To call NWIsManager, you must have console operator rights.

A station is a manager if it is a supervisor, or if it appears in the MANAGERS property of the supervisor object.

NCP Calls

0x2222 23 73 Is Calling Station A Manager

NWLoginToFileServer

Attempts to log an object in to the specified NetWare server.

Local Servers: blocking

Remote Servers: blocking

NetWare Server: 3.11, 3.12, 3.2, 4.x, 5.x, 6.x

Platform: NLM, Windows NT, Windows 95, Windows 98

Library: Cross-Platform NetWare Calls (CAL*.*)

Service: Server Environment

Syntax

```
#include <nwserver.h>
#include <nwbindry.h>
or
#include <nwcalls.h>

NWCCODE N_API NWLoginToFileServer  (
   NWCONN_HANDLE        conn,
   const nstr8 N_FAR    *objName,
   nuint16              objType,
   const nstr8 N_FAR    *password);
```

Delphi Syntax

```
uses calwin32

Function NWLoginToFileServer
  (conn : NWCONN_HANDLE;
   const objName : pnstr8;
   objType : nuint16;
   const password : pnstr8
) : NWCCODE;
```

Parameters

conn

   (IN) Specifies the NetWare server connection handle.

objName

   (IN) Points to the bindery object name of the object logging in to the NetWare server object name (up to 48 characters including the NULL terminator).

objType

   (IN) Specifies the Bindery object type of the object logging in to the NetWare server.

password

(IN) Points to the upper-case password of the bindery object logging in to the NetWare server (or pass in a zero-length string if a password is not required).

Return Values

These are common return values; see Return Values (*Return Values for C*) for more information.

0x0000	SUCCESSFUL
0x8800	ALREADY_ATTACHED
0x8801	INVALID_CONNECTION
0x890A	NLM_INVALID_CONNECTION
0x8996	SERVER_OUT_OF_MEMORY
0x89C1	LOGIN_DENIED_NO_ACCOUNT_BALANCE
0x89C2	LOGIN_DENIED_NO_CREDIT
0x89C5	INTRUDER_DETECTION_LOCK
0x89D9	ERR_MAX_SERVERS
0x89DA	UNAUTHORIZED_LOGIN_TIME
0x89DB	UNAUTHORIZED_LOGIN_STATION
0x89DC	ACCOUNT_DISABLED
0x89DE	PASSWORD_HAS_EXPIRED_NO_GRACE
0x89DF	PASSWORD_EXPIRED
0x89FB	INVALID_PARAMETERS
0x89FE	BINDERY_LOCKED
0x89FF	NO_SUCH_OBJECT_OR_BAD_PASSWORD
0xFF	Failure

Remarks

If the `conn` parameter specifies an NDS authenticated connection, NWLoginToFileServer will return ALREADY_ATTACHED (0x8800).

To determine if the `conn` parameter specifies an NDS authenticated connection, call NWCCGetConnRefInfo with the `infoType` parameter set to NWCC_INFO_NDS_STATE. If NWCC_NDS_CAPABLE is returned in the `infoType` parameter, the connection must be cleared (see Closing and Clearing Connections) and a new connection must be opened (see Attaching to Servers and Opening Connections) before NWLoginToFileServer will successfully return (*NDK: Connection, Message, and NCP Extensions*).

If the encryption key is not available, it attempts an unencrypted login. If the key is available, the password is encrypted and an encrypted login is attempted.

NWLoginToFileServer performs only the login, not the attach. Clients must be previously attached to call NWLoginToFileServer. Attaching to a NetWare server is not the same as logging in. A workstation attaches to a NetWare server to obtain a connection number. The workstation can then log in to the NetWare server using that connection number. NWLoginToFileServer does not, however, interpret the login script.

Valid bindery object types for OT_ constants follow:

```
OT_WILD                     0xFFFF
OT_UNKNOWN                  0x0000
OT_USER                     0x0100
OT_USER_GROUP               0x0200
OT_PRINT_QUEUE              0x0300
OT_FILE_SERVER              0x0400
OT_JOB_SERVER               0x0500
OT_GATEWAY                  0x0600
OT_PRINT_SERVER             0x0700
OT_ARCHIVE_QUEUE            0x0800
OT_ARCHIVE_SERVER           0x0900
OT_JOB_QUEUE                0x0A00
OT_ADMINISTRATION           0x0B00
OT_NAS_SNA_GATEWAY          0x2100
OT_REMOTE_BRIDGE_SERVER     0x2600
OT_TCPIP_GATEWAY            0x2700
```

Extended bindery object types follow:

```
OT_TIME_SYNCHRONIZATION_SERVER    0x2D00
OT_ARCHIVE_SERVER_DYNAMIC_SAP     0x2E00
OT_ADVERTISING_PRINT_SERVER       0x4700
OT_PRINT_QUEUE_USER               0x5300
```

NCP Calls

0x2222 23 24 Keyed Object Login
0x2222 23 53 Get Bindery Object ID

NWLogoutFromFileServer

Attempts to log the workstation out of the specified NetWare server.

NetWare Server: 3.11, 3.12, 3.2, 4.x, 5.x, 6.x

Platform: NLM, Windows NT, Windows 95, Windows 98

Library: Cross-Platform NetWare Calls (CAL*.*)

Service: Server Environment

Syntax

```
#include <nwserver.h>
or
#include <nwcalls.h>

NWCCODE N_API  NWLogoutFromFileServer  (
   NWCONN_HANDLE   conn);
```

Delphi Syntax

```
uses calwin32

Function NWLogoutFromFileServer
  (conn : NWCONN_HANDLE
) : NWCCODE;
```

Parameters

conn

>   (IN) Specifies the NetWare server connection handle associated with the server from which to log out.

Return Values

These are common return values; see Return Values (*Return Values for C*) for more information.

0x0000	SUCCESSFUL
0x8801	INVALID_CONNECTION
0x890A	NLM_INVALID_CONNECTION
0x88FB	INVALID_PARAMETERS

Remarks

To call NWLogoutFromFileServer, you must have console operator rights.

If successful, drive mappings dependent on the connection are deleted.

NWSetFileServerDateAndTime

Sets the date and time of a NetWare server.

Local Servers: blocking

Remote Servers: blocking

NetWare Server: 3.11, 3.12, 3.2, 4.x, 5.x, 6.x

Platform: NLM, Windows NT, Windows 95, Windows 98

Library: Cross-Platform NetWare Calls (CAL*.*)

Service: Server Environment

Syntax

```
#include <nwserver.h>
or
#include <nwcalls.h>

NWCCODE N_API  NWSetFileServerDateAndTime  (
   NWCONN_HANDLE   conn,
   nuint8          year,
   nuint8          month,
   nuint8          day,
   nuint8          hour,
   nuint8          minute,
   nuint8          second);
```

Delphi Syntax

```
uses calwin32

Function NWSetFileServerDateAndTime
  (conn : NWCONN_HANDLE;
   year : nuint8;
   month : nuint8;
   day : nuint8;
   hour : nuint8;
   minute : nuint8;
   second : nuint8
) : NWCCODE;
```

Parameters

conn

   (IN) Specifies the NetWare server connection handle.

year

   (IN) Specifies the value corresponding to the year (0-179).

month

   (IN) Specifies the month value (1=January; 12=December).

day

   (IN) Specifies the day value (1-31).

hour

   (IN) Specifies the hour value (0=midnight; 23=11 p.m.).

minute

   (IN) Specifies the minute value (0-59).

second

   (IN) Specifies the second value (0-59).

Return Values

These are common return values; see Return Values (*Return Values for C*) for more information.

0x0000	SUCCESSFUL
0x8801	INVALID_CONNECTION
0x890A	NLM_INVALID_CONNECTION
0x89C6	NO_CONSOLE_PRIVILEGES

Remarks

To call NWSetFileServerDateAndTime, you must have console operator rights.

The `year` parameter contains the following values which correspond to the specified years:

0-79 2000-2079
80-99 1980-1999
100-179 2000-2079

NCP Calls

0x2222 23 202 Set File Server Date And Time

Server Environment Structures

3

This documentation alphabetically lists the reference information for each server environment structure.

CACHE_COUNTERS

Returns cache information.

Service: Server Environment

Defined In: nwfse.h

Structure

```
typedef struct {
    nuint32        readExistingBlockCount ;
    nuint32        readExistingWriteWaitCount ;
    nuint32        readExistingPartialReadCount ;
    nuint32        readExistingReadErrorCount ;
    nuint32        writeBlockCount ;
    nuint32        writeEntireBlockCount ;
    nuint32        getDiskCount ;
    nuint32        getDiskNeedToAllocCount ;
    nuint32        getDiskSomeoneBeatMeCount ;
    nuint32        getDiskPartialReadCount ;
    nuint32        getDiskReadErrorCount ;
    nuint32        getAsyncDiskCount ;
    nuint32        getAsyncDiskNeedToAlloc ;
    nuint32        getAsyncDiskSomeoneBeatMe ;
    nuint32        errorDoingAsyncReadCount ;
    nuint32        getDiskNoReadCount ;
    nuint32        getDiskNoReadAllocCount ;
    nuint32        getDiskNoReadSomeoneBeatMeCount ;
    nuint32        diskWriteCount ;
    nuint32        diskWriteAllocCount ;
    nuint32        diskWriteSomeoneBeatMeCount ;
    nuint32        writeErrorCount ;
    nuint32        waitOnSemaphoreCount ;
    nuint32        allocBlockWaitForSomeoneCount ;
    nuint32        allocBlockCount ;
    nuint32        allocBlockWaitCount ;
} CACHE_COUNTERS;
```

Delphi Structure

```
uses calwin32

  CACHE_COUNTERS = packed Record
    readExistingBlockCount : nuint32;
    readExistingWriteWaitCount : nuint32;
    readExistingPartialReadCount : nuint32;
    readExistingReadErrorCount : nuint32;
    writeBlockCount : nuint32;
    writeEntireBlockCount : nuint32;
    getDiskCount : nuint32;
    getDiskNeedToAllocCount : nuint32;
    getDiskSomeoneBeatMeCount : nuint32;
```

```
    getDiskPartialReadCount : nuint32;
    getDiskReadErrorCount : nuint32;
    getAsyncDiskCount : nuint32;
    getAsyncDiskNeedToAlloc : nuint32;
    getAsyncDiskSomeoneBeatMe : nuint32;
    errorDoingAsyncReadCount : nuint32;
    getDiskNoReadCount : nuint32;
    getDiskNoReadAllocCount : nuint32;
    getDiskNoReadSomeoneBeatMeCount : nuint32;
    diskWriteCount : nuint32;
    diskWriteAllocCount : nuint32;
    diskWriteSomeoneBeatMeCount : nuint32;
    writeErrorCount : nuint32;
    waitOnSemaphoreCount : nuint32;
    allocBlockWaitForSomeoneCount : nuint32;
    allocBlockCount : nuint32;
    allocBlockWaitCount : nuint32
  End;
```

Fields

readExistingBlockCount

Specifies the number of times an existing cache block has been read.

readExistingWriteWaitCount

Specifies the number of times an existing cache block was being read but had to wait until someone else was finished writing to it before it could be read completely.

readExistingPartialReadCount

Specifies the number cache blocks that were being read but encountered dirty sectors.

readExistingReadErrorCount

Specifies the number of cache blocks that experienced errors while trying to be read.

writeBlockCount

Specifies the number of cache buffers that were dirty and written to disk.

writeEntireBlockCount

Specifies the number of entire cache blocks that were dirty and written to disk.

getDiskCount

Specifies the number of times a block is obtained from disk to be compared against what is in a cache.

getDiskNeedToAllocCount

Specifies the number of times a cache control structure needs to be allocated because what is obtained from disk is not in a cache.

getDiskSomeoneBeatMeCount

Specifies the number of times a cache control structure is allocated to store new data from a disk but a recheck of a cache shows the new data is already stored indicating someone else beat

the first attempt to store the data. (The newly allocated cache control structure is then returned to the available list.)

getDiskPartialReadCount

Specifies the number of times a disk was only partially read.

getDiskReadErrorCount

Specifies the number of times an error was encountered while reading data from a disk.

getAsyncDiskCount

Specifies the number of times a block is obtained from an asynchronous disk to be compared against what is in a cache.

getAsyncDiskNeedToAlloc

Specifies the number of times a cache control structure needs to be allocated because what is obtained from an asynchronous disk is not in a cache.

getAsyncDiskSomeoneBeatMe

Specifies the number of times a cache control structure is allocated to store new data from an asynchronous disk but a recheck of a cache shows the new data is already stored indicating someone else beat the first attempt to store the data. (The newly allocated cache control structure is then returned to the available list.)

errorDoingAsyncReadCount

Specifies the number of times an error occurred while reading from a disk. It is used to compare with what may or may not be in a cache.

getDiskNoReadCount

Specifies the number of times data is obtained from a disk and put into a cache without requesting a read on the data.

getDiskNoReadAllocCount

Specifies the number of times a new cache control structure has to be allocated during the time that data is obtained from disk to be put into a cache.

getDiskNoReadSomeoneBeatMeCount

Specifies the number of times a cache control structure has to be allocated during the time that data is obtained from disk to be put into a cache but a recheck of a cache shows the new data is already stored indicating someone else beat the first attempt to store the data. (The newly allocated cache control structure is then returned to the available list.)

diskWriteCount

Specifies the number of times a cache block has been written to disk.

diskWriteAllocCount

Specifies the number of times a cache control structure was allocated during the time that data is being written to disk.

diskWriteSomeoneBeatMeCount

Specifies the number of times a cache control structure has to be allocated during the time that a cache block is written to disk but a recheck of a cache shows the new data is already written

to disk indicating someone else beat the first attempt to store the data. (The newly allocated cache control structure is then returned to the available list.)

writeErrorCount

Specifies the number of times an error was encountered while writing a cache to disk.

waitOnSemaphoreCount

Specifies the number of times a cache control blocks was waiting on a semaphore while cache and disk blocks were being checked

allocBlockWaitForSomeoneCount

Specifies the number of times that the allocate waiting count was set. You must set a semaphore and try again later.

allocBlockCount

Specifies the number of times a cache control block was allocated.

allocBlockWaitCount

Specifies the number of times the LRU and cache nodes were not available.

CACHE_INFO

Returns information about a cache.

Service: Server Environment

Defined In: nwfse.h

Structure

```
typedef struct {
   nuint32   maxByteCount ;
   nuint32   minNumOfCacheBuffers ;
   nuint32   minCacheReportThreshold ;
   nuint32   allocWaitingCount ;
   nuint32   numDirtyBlocks ;
   nuint32   cacheDirtyWaitTime ;
   nuint32   cacheMaxConcurrentWrites ;
   nuint32   maxDirtyTime ;
   nuint32   numOfDirCacheBuffers ;
   nuint32   cacheByteToBlockShiftFactor ;
} CACHE_INFO;
```

Delphi Structure

```
uses calwin32

  CACHE_INFO = packed Record
    maxByteCount : nuint32;
    minNumOfCacheBuffers : nuint32;
    minCacheReportThreshold : nuint32;
    allocWaitingCount : nuint32;
    numDirtyBlocks : nuint32;
    cacheDirtyWaitTime : nuint32;
    cacheMaxConcurrentWrites : nuint32;
    maxDirtyTime : nuint32;
    numOfDirCacheBuffers : nuint32;
    cacheByteToBlockShiftFactor : nuint32
  End;
```

Fields

maxByteCount

Specifies the length in bytes of a cache block.

minNumOfCacheBuffers

Specifies the minimum number of cache buffers allowed on the server (default is 20, but values from 20-1000 are supported).

minCacheReportThreshold

Specifies the number of cache buffers used for the report threshold (default value is 20, but values from 0-1000 are supported).

allocWaitingCount

Specifies the number of processes waiting to allocate a cache block.

numDirtyBlocks

Specifies the number of dirty blocks waiting to be written to disk.

cacheDirtyWaitTime

Specifies the maximum wait before a Write request is written to disk (default is 3.3 seconds, but values from 0.1-10 seconds are supported).

cacheMaxConcurrentWrites

Specifies the maximum number of Write requests for changed file data that can be put in the elevator before the disk head begins a sweep across the disk (default is 50, but values from 10-100 are supported).

maxDirtyTime

Specifies the longest time (in ticks) since the server was brought up that a dirty block has waited before it was written to disk.

numOfDirCacheBuffers

Specifies the number of directory cache buffers on the server.

cacheByteToBlockShiftFactor

Specifies the `n` factor used in the block size equation.

Remarks

The `minNumOfCacheBuffers`, `minCacheReportThreshold`, `cacheDirtyWaitTime`, and `cacheMaxConcurrentWrites` fields can be set by using the SET console command.

When the number of cache buffers reach a number equal to the sum of the numbers specified by the `minNumOfCacheBuffers` and `minCacheReportThreshold` fields, the server sends a message warning that the cache buffers are getting low.

The block size (in bytes) is calculated using:

block size = 2^{n+9}

where n is the shift factor.

CACHE_MEM_COUNTERS

Returns cache memory information.

Service: Server Environment

Defined In: nwfse.h

Structure

```
typedef struct {
   nuint32   originalNumOfCacheBuffers ;
   nuint32   currentNumOfCacheBuffers ;
   nuint32   cacheDirtyBlockThreshold ;
   nuint32   waitNodeCount ;
   nuint32   waitNodeAllocFailureCount ;
   nuint32   moveCacheNodeCount ;
   nuint32   moveCacheNodeFromAvailCount ;
   nuint32   accelerateCacheNodeWriteCount ;
   nuint32   removeCacheNodeCount ;
   nuint32   removeCacheNodeFromAvailCount ;
} CACHE_MEM_COUNTERS;
```

Delphi Structure

```
uses calwin32

  CACHE_MEM_COUNTERS = packed Record
    originalNumOfCacheBuffers : nuint32;
    currentNumOfCacheBuffers : nuint32;
    cacheDirtyBlockThreshold : nuint32;
    waitNodeCount : nuint32;
    waitNodeAllocFailureCount : nuint32;
    moveCacheNodeCount : nuint32;
    moveCacheNodeFromAvailCount : nuint32;
    accelerateCacheNodeWriteCount : nuint32;
    removeCacheNodeCount : nuint32;
    removeCacheNodeFromAvailCount : nuint32
  End;
```

Fields

originalNumOfCacheBuffers

   Specifies the number of cache buffers that existed when the server was brought up.

currentNumOfCacheBuffers

   Specifies the number of cache buffers currently on the server.

cacheDirtyBlockThreshold

   Specifies the maximum number of cache blocks allowed to be dirty simultaneously.

waitNodeCount

Specifies the number of wait nodes that have been allocated. (Wait nodes are memory chunks created to track the start and end of internal processes.)

waitNodeAllocFailureCount

Specifies the number of times a wait node was unable to be allocated.

moveCacheNodeCount

Specifies the number of times a cache block control node has been moved from one node to another for memory management.

moveCacheNodeFromAvailCount

Specifies the number of times a cache block control node has been available and sitting in the available list and then moved.

accelerateCacheNodeWriteCount

Specifies the number of dirty cache nodes that were moved to the beginning of the list to be written to disk.

removeCacheNodeCount

Specifies the number of cache block control structure nodes that were removed while collapsing cache memory segments.

removeCacheNodeFromAvailCount

Specifies the number of cache block control nodes that were removed from the cache node available list.

CACHE_TREND_COUNTERS

Returns cache trend information.

Service: Server Environment

Defined In: nwfse.h

Structure

```
typedef struct {
   nuint32   numCacheChecks ;
   nuint32   numCacheHits ;
   nuint32   numDirtyCacheChecks ;
   nuint32   numDirtyCacheHits ;
   nuint32   cacheUsedWhileChecking ;
   nuint32   waitForDirtyBlocksDecreaseCount ;
   nuint32   allocBlockFromAvailCount ;
   nuint32   allocBlockFromLRUCount ;
   nuint32   allocBlockAlreadyWaiting ;
   nuint32   LRUSittingTime ;
} CACHE_TREND_COUNTERS;
```

Delphi Structure

```
uses calwin32

  CACHE_TREND_COUNTERS = packed Record
    numCacheChecks : nuint32;
    numCacheHits : nuint32;
    numDirtyCacheChecks : nuint32;
    numDirtyCacheHits : nuint32;
    cacheUsedWhileChecking : nuint32;
    waitForDirtyBlocksDecreaseCount : nuint32;
    allocBlockFromAvailCount : nuint32;
    allocBlockFromLRUCount : nuint32;
    allocBlockAlreadyWaiting : nuint32;
    LRUSittingTime : nuint32
  End;
```

Fields

numCacheChecks

Specifies the total number of times any block in the cache was looked at since the server was brought up.

numCacheHits

Specifies the number of times cache requests were serviced from existing cache blocks.

numDirtyCacheChecks

Specifies the number of times a cache block was checked to determine if it is dirty.

numDirtyCacheHits

Specifies the time in ticks the oldest cache block has been available (sitting in the LRU list).

cacheUsedWhileChecking

Specifies the number of cache blocks that were allocated and then returned to the available list while a cache was being checked during different cache operations (read, write, etc.).

waitForDirtyBlocksDecreaseCount

Specifies the number of times a process had to wait until the number of dirty cache blocks decreased to less than the cache dirty block threshold.

allocBlockFromAvailCount

Specifies the number of cache blocks removed from the available list and used.

allocBlockFromLRUCount

Specifies the number of cache blocks removed from the LRU list and used done if cache blocks cannot be removed from the available list).

allocBlockAlreadyWaiting

Specifies the number of times an attempt was made to allocate a cache block but none are available in the available list or LRU (system waits and tries again later).

LRUSittingTime

Specifies the time (in ticks) that the oldest cache block has been available and was sitting in the LRU list.

CPU_INFO

Returns CPU information.

Service: Server Environment

Defined In: nwfse.h

Structure

```
typedef struct {
   nuint32   pageTableOwnerFlag ;
   nuint32   CPUTypeFlag ;
   nuint32   coProcessorFlag ;
   nuint32   busTypeFlag ;
   nuint32   IOEngineFlag ;
   nuint32   FSEngineFlag ;
   nuint32   nonDedicatedFlag;
} CPU_INFO;
```

Delphi Structure

```
uses calwin32

  CPU_INFO = packed Record
    pageTableOwnerFlag : nuint32;
    CPUTypeFlag : nuint32;
    coProcessorFlag : nuint32;
    busTypeFlag : nuint32;
    IOEngineFlag : nuint32;
    FSEngineFlag : nuint32;
    nonDedicatedFlag : nuint32;
  End;
```

Fields

pageTableOwnerFlag

   Specifies which domain is the current domain.

CPUTypeFlag

   Specifies the CPU type:

   0   80386
   1   80486
   2   Pentium
   3   Pentium Pro

coProcessorFlag

   Specifies whether a numeric coprocessor is present (true=present).

busTypeFlag

Specifies the bus type:

0x01=micro channel
0x02=EISA
0x04=PCI
0x08=PCMCIA
0x10=ISA

IOEngineFlag

Specifies whether the IO engine is installed (true=installed).

FSEngineFlag

Specifies whether the file system engine is installed (true=installed).

nonDedicatedFlag

Specifies whether the CPU is dedicated.

Remarks

DIR_CACHE_INFO

Returns information for a directory cache.

Service: Server Environment

Defined In: nwfse.h

Structure

```
typedef struct {
   nuint32   minTimeSinceFileDelete ;
   nuint32   absMinTimeSinceFileDelete ;
   nuint32   minNumOfDirCacheBuffers ;
   nuint32   maxNumOfDirCacheBuffers ;
   nuint32   numOfDirCacheBuffers ;
   nuint32   dCMinNonReferencedTime ;
   nuint32   dCWaitTimeBeforeNewBuffer ;
   nuint32   dCMaxConcurrentWrites ;
   nuint32   dCDirtyWaitTime ;
   nuint32   dCDoubleReadFlag ;
   nuint32   mapHashNodeCount ;
   nuint32   spaceRestrictionNodeCount ;
   nuint32   trusteeListNodeCount ;
   nuint32   percentOfVolumeUsedByDirs ;
} DIR_CACHE_INFO;
```

Delphi Structure

```
uses calwin32

  DIR_CACHE_INFO = packed Record
    minTimeSinceFileDelete : nuint32;
    absMinTimeSinceFileDelete : nuint32;
    minNumOfDirCacheBuffers : nuint32;
    maxNumOfDirCacheBuffers : nuint32;
    numOfDirCacheBuffers : nuint32;
    dCMinNonReferencedTime : nuint32;
    dCWaitTimeBeforeNewBuffer : nuint32;
    dCMaxConcurrentWrites : nuint32;
    dCDirtyWaitTime : nuint32;
    dCDoubleReadFlag : nuint32;
    mapHashNodeCount : nuint32;
    spaceRestrictionNodeCount : nuint32;
    trusteeListNodeCount : nuint32;
    percentOfVolumeUsedByDirs : nuint32;
  End;
```

Fields

minTimeSinceFileDelete

Specifies the minimum time (in clock ticks) between when a file is deleted and when it can be purged.

absMinTimeSinceFileDelete

Specifies the minimum time (in clock ticks) between when a file is deleted and when it can be purged after the system has no available blocks.

minNumOfDirCacheBuffers

Specifies the minimum number of directory cache buffers that can be allocated on the server.

maxNumOfDirCacheBuffers

Specifies the maximum number of directory cache buffers that can be allocated on the server.

numOfDirCacheBuffers

Specifies the current number of directory cache buffers on the server.

dCMinNonReferencedTime

Specifies the time (in clock ticks) that must elapse between the last reference of a directory buffer and the time it is reused.

dCWaitTimeBeforeNewBuffer

Specifies the time (in clock ticks) that must elapse before an additional directory cache buffer can be allocated.

dCMaxConcurrentWrites

Specifies the maximum number of write requests from directory cache buffers that can be put in the elevator before they are written to disk.

dCDirtyWaitTime

Specifies the maximum time (in clock ticks) that the server can wait before writing dirty cache buffers to disk.

dCDoubleReadFlag

Specifies whether the directory block must be read and verified from both copies of directory tables.

mapHashNodeCount

Specifies the number of times a hash node has been allocated for directories.

spaceRestrictionNodeCount

Specifies the total number of disk space restrictions placed since the server was brought up.

trusteeListNodeCount

Specifies the total number of trustee assignments set on the file system since the server was brought up.

percentOfVolumeUsedByDirs

Specifies the total volume space percentage that is used by directory entries.

Remarks

The `minNumOfDirCacheBuffers`, `maxNumOfDirCacheBuffers`, `dCMinNonReferencedTime`, `dCWaitTimeBeforeNewBuffer`, `dCMaxConcurrentWrites`, `dCDirtyWaitTime`, and `percentOfVolumeUsedByDirs` fields can be set by using the SET console command.

DRV_MAP_TABLE

Returns drive map table data.

Service: Server Environment

Defined In: nwserver.h

Structure

```
typedef struct
{
   nuint32   systemElapsedTime ;
   nuint8    SFTSupportLevel ;
   nuint8    logicalDriveCount ;
   nuint8    physicalDriveCount ;
   nuint8    diskChannelTable [5];
   nuint16   pendingIOCommands ;
   nuint8    driveMappingTable [32];
   nuint8    driveMirrorTable [32];
   nuint8    deadMirrorTable [32];
   nuint8    reMirrorDriveNumber ;
   nuint8    reserved ;
   nuint32   reMirrorCurrentOffset ;
   nuint16   SFTErrorTable [60];
} DRV_MAP_TABLE;
```

Delphi Structure

```
uses calwin32

  DRV_MAP_TABLE = packed Record
    systemElapsedTime : nuint32;
    SFTSupportLevel : nuint8;
    logicalDriveCount : nuint8;
    physicalDriveCount : nuint8;
    diskChannelTable : Array[0..4] Of nuint8;
    pendingIOCommands : nuint16;
    driveMappingTable : Array[0..31] Of nuint8;
    driveMirrorTable : Array[0..31] Of nuint8;
    deadMirrorTable : Array[0..31] Of nuint8;
    reMirrorDriveNumber : nuint8;
    reserved : nuint8;
    reMirrorCurrentOffset : nuint32;
    SFTErrorTable : Array[0..59] Of nuint16;
  End;
```

Fields

systemElapsedTime

Specifies how long the NetWare server has been up. `systemElapsedTime` is returned in units of approximately 1/18 second and is used to determine the amount of time that has elapsed between consecutive calls. When this field reaches 0xFFFFFFFF, it wraps back to zero.

SFTSupportLevel

Specifies the SFT level offered by the NetWare server: 1 hot disk error fix 2 disk mirroring and transaction tracking 3 physical NetWare server mirroring

logicalDriveCount

Specifies the number of logical drives attached to the server. If the NetWare server supports SFT Level II or above and disks are mirrored, `logicalDriveCount` will be lower than the actual number of physical disk subsystems attached to the NetWare server. The NetWare server's operating system considers mirrored disks to be one logical drive.

physicalDriveCount

Specifies the number of physical disk units attached to the server.

diskChannelTable

Specifies the 5-byte table that indicates which disk channels exists on the server and what their drive types are. (Each channel is 1 byte.) A nonzero value in the Disk Channel Table indicates that the corresponding disk channel exists in the NetWare server. The drive types are:

```
1 = XT
2 = AT
3 = SCSI
4 = disk coprocessor
50 to 255 = Value Added Disk Drive (VADD)
```

pendingIOCommands

Specifies the number of outstanding disk controller commands.

driveMappingTable

Specifies the 32-byte table containing the primary physical drive to which each logical drive is mapped (0xFF = no such logical drive).

driveMirrorTable

Specifies the 32-byte table containing the secondary physical drive to which each logical drive is mapped (0xFF = no such logical drive).

deadMirrorTable

Specifies the 32-byte table containing the secondary physical drive to which each logical drive was last mapped (0xFF = logical drive was never mirrored). This table is used in conjunction with the Drive Mirror Table. If the entry in the Drive Mirror Table shows that a drive is not currently mirrored, the table can be used to determine which drive previously mirrored the logical drive. The Dead Mirror Table is used to remirror a logical drive after a mirror failure.

reMirrorDriveNumber

Specifies the physical drive number of the disk currently being remirrored (0xFF = no disk being remirrored).

reserved

Is currently not used.

reMirrorCurrentOffset

Specifies the block number that is currently being remirrored.

SFTErrorTable

Specifies the 60-byte table containing SFT internal error counters.

DSK_CACHE_STATS

Returns disk caching statistics.

Service: Server Environment

Defined In: nwserver.h

Structure

```
typedef struct
{
   nuint32   systemElapsedTime ;
   nuint16   cacheBufferCount ;
   nuint16   cacheBufferSize ;
   nuint16   dirtyCacheBuffers ;
   nuint32   cacheReadRequests ;
   nuint32   cacheWriteRequests ;
   nuint32   cacheHits ;
   nuint32   cacheMisses ;
   nuint32   physicalReadReqeusts ;
   nuint32   physicalWriteRequests ;
   nuint16   physicalReadErrors ;
   nuint16   physicalWriteErrors ;
   nuint32   cacheGetRequests ;
   nuint32   cacheFullWriteRequests ;
   nuint32   cachePartialWriteRequests ;
   nuint32   backgroundDirtyWrites ;
   nuint32   backgroundAgedWrites ;
   nuint32   totalCacheWrites ;
   nuint32   cacheAllocations ;
   nuint16   thrashingCount ;
   nuint16   LRUBlockWasDirtyCount ;
   nuint16   readBeyondWriteCount ;
   nuint16   fragmentedWriteCount ;
   nuint16   cacheHitOnUnavailCount ;
   nuint16   cacheBlockScrappedCount ;
} DSK_CACHE_STATS;
```

Delphi Structure

```
uses calwin32

  DSK_CACHE_STATS = packed Record
    systemElapsedTime : nuint32;
    cacheBufferCount : nuint16;
    cacheBufferSize : nuint16;
    dirtyCacheBuffers : nuint16;
    cacheReadRequests : nuint32;
    cacheWriteRequests : nuint32;
    cacheHits : nuint32;
    cacheMisses : nuint32;
    physicalReadRequests : nuint32;
```

```
      physicalWriteRequests : nuint32;
      physicalReadErrors : nuint16;
      physicalWriteErrors : nuint16;
      cacheGetRequests : nuint32;
      cacheFullWriteRequests : nuint32;
      cachePartialWriteRequests : nuint32;
      backgroundDirtyWrites : nuint32;
      backgroundAgedWrites : nuint32;
      totalCacheWrites : nuint32;
      cacheAllocations : nuint32;
      thrashingCount : nuint16;
      LRUBlockWasDirtyCount : nuint16;
      readBeyondWriteCount : nuint16;
      fragmentedWriteCount : nuint16;
      cacheHitOnUnavailCount : nuint16;
      cacheBlockScrappedCount : nuint16;
   End;
```

Fields

systemElapsedTime

Specifies how long the NetWare server has been up. This value is returned in units of
approximately 1/18 second and is used to determine the amount of time that has elapsed
between consecutive calls. when `systemElapsedTime` reaches 0xFFFFFFFF, it wraps
back to zero.

cacheBufferCount

Specifies the number of cache buffers in the server.

cacheBufferSize

Specifies the number of bytes in a cache buffer.

dirtyCacheBuffers

Specifies the number of cache buffers in use.

cacheReadRequests

Specifies the number of times the cache software received a request to read data from the disk.

cacheWriteRequests

Specifies the number of times the cache software received a request to write data to the disk.

cacheHits

Specifies the number of times cache requests were serviced form existing cache blocks.

cacheMisses

Specifies the number of times cache requests could not be serviced form existing cache blocks.

physicalReadReqeusts

Specifies the number of times the cache software issued a physical read request to a disk driver.
(A physical read requests reads in as much data as the cache block holds.)

physicalWriteRequests

Specifies the number of times the cache software issued a physical write request to a disk driver.

physicalReadRequests

Specifies the number of times the cache software received an error from the disk driver on a disk read request.

physicalWriteErrors

Specifies the number of times the cache software received an error from the disk driver on a disk write request.

cacheGetRequests

Specifies the number of times the cache software received a request to read information from the disk.

cacheFullWriteRequests

Specifies the number of times the cache software was requested to write information to disk that exactly filled one or more sectors.

cachePartialWriteRequests

Specifies the number of times the cache software was requested to write information to disk that did not exactly fill a sector. (Partial write requests require a disk preread.)

backgroundDirtyWrites

Specifies the number of times a cache block that was written to disk was completely filled with information. (The whole cache block was written.)

backgroundAgedWrites

Specifies the number of times the background disk write process wrote a partially filled cache block to disk. (The cache block was written to disk because the block had not been accessed for a significant period of time.)

totalCacheWrites

Specifies the total number of cache buffers written to disk.

cacheAllocations

Specifies the number of times a cache block was allocated for use.

thrashingCount

Specifies the number of times a cache block was not available when a cache block allocation was requested.

LRUBlockWasDirtyCount

Specifies the number of times the Least_Recently_Used cache block allocation algorithm reclaimed a dirty cache block.

readBeyondWriteCount

Specifies the number of times a file read request was received for data not yet written to disk (due to file write requests that had not yet filled the cache block). (This requires a disk preread.)

fragmentedWriteCount

Specifies the number of times a dirty cache block contained noncontiguous sectors of information to be written, and the skipped sectors were not preread from the disk. (Multiple disk writes were issued to write out the cache buffer.)

cacheHitOnUnavailCount

Specifies the number of times a cache request could be serviced from an available cache block but the cache buffer could not be used because it was in the process of being written to or read from disk.

cacheBlockScrappedCount

Specifies the number of times a cache block was scrapped.

FILE_SERVER_COUNTERS

Returns information regarding the number of file packets received by the server.

Service: Server Environment

Defined In: nwfse.h

Structure

```
typedef struct {
   nuint16   tooManyHops ;
   nuint16   unknownNetwork ;
   nuint16   noSpaceForService ;
   nuint16   noReceiveBuffers ;
   nuint16   notMyNetwork ;
   nuint32   netBIOSProgatedCount ;
   nuint32   totalPacketsServiced ;
   nuint32   totalPacketsRouted ;
} FILE_SERVER_COUNTERS;
```

Delphi Structure

```
uses calwin32

  FILE_SERVER_COUNTERS = packed Record
    tooManyHops : nuint16;
    unknownNetwork : nuint16;
    noSpaceForService : nuint16;
    noReceiveBuffers : nuint16;
    notMyNetwork : nuint16;
    netBIOSProgatedCount : nuint32;
    totalPacketsServiced : nuint32;
    totalPacketsRouted : nuint32;
  End;
```

Fields

tooManyHops

Specifies the number of packets discarded because they had passed through more than 16 bridges without reaching their destination.

unknownNetwork

Specifies the number of packets discarded because their destination network was unknown to the server.

noSpaceForService

Is reserved (pass 0).

noReceiveBuffers

Specifies the number of times a packet was discarded because no buffers existed to receive it.

notMyNetwork

Specifies the number of received packets not destined for the server.

netBIOSProgatedCount

Specifies the number of NetBIOS packets received that were sent forward.

totalPacketsServiced

Specifies the total packets received by the server.

totalPacketsRouted

Specifies the number of all packets forwarded by the server.

FSE_FILE_SYSTEM_INFO

Return file system information related to disk operation.

Service: Server Environment

Defined In: nwfse.h

Structure

```
typedef struct
{
   nuint32   FATMovedCount ;
   nuint32   FATWriteErrorCount ;
   nuint32   someoneElseDidItCount0 ;
   nuint32   someoneElseDidItCount1 ;
   nuint32   someoneElseDidItCount2 ;
   nuint32   iRanOutSomeoneElseDidItCount0 ;
   nuint32   iRanOutSomeoneElseDidItCount1 ;
   nuint32   iRanOutSomeoneElseDidItCount2 ;
   nuint32   turboFATBuildScrewedUpCount ;
   nuint32   extraUseCountNodeCount ;
   nuint32   extraExtraUseCountNodeCount ;
   nuint32   errorReadingLastFATCount ;
   nuint32   someoneElseUsingThisFileCount ;
} FSE_FILE_SYSTEM_INFO;
```

Delphi Structure

```
uses calwin32

FSE_FILE_SYSTEM_INFO = packed Record
   FATMovedCount : nuint32;
   FATWriteErrorCount : nuint32;
   someoneElseDidItCount0 : nuint32;
   someoneElseDidItCount1 : nuint32;
   someoneElseDidItCount2 : nuint32;
   iRanOutSomeoneElseDidItCount0 : nuint32;
   iRanOutSomeoneElseDidItCount1 : nuint32;
   iRanOutSomeoneElseDidItCount2 : nuint32;
   turboFATBuildScrewedUpCount : nuint32;
   extraUseCountNodeCount : nuint32;
   extraExtraUseCountNodeCount : nuint32;
   errorReadingLastFATCount : nuint32;
   someoneElseUsingThisFileCount : nuint32;
  End;
```

Fields

FATMovedCount

Specifies the number of times the NetWare server OS has moved the location of the FAT.

FATWriteErrorCount

Specifies the number of disk write errors in both the original and mirrored copy of a disk's FAT sector.

someoneElseDidItCount0

Specifies this is used internally by the OS.

someoneElseDidItCount1

Specifies this is used internally by the OS.

someoneElseDidItCount2

Specifies this is used internally by the OS.

iRanOutSomeoneElseDidItCount0

Specifies this is used internally by the OS.

iRanOutSomeoneElseDidItCount1

Specifies this is used internally by the OS.

iRanOutSomeoneElseDidItCount2

Specifies this is used internally by the OS.

turboFATBuildScrewedUpCount

Specifies the number of times the OS tried to allocate a Turbo FAT index but failed.

extraUseCountNodeCount

Specifies the number of times the OS tried to allocate a use count node for a TTS transaction but failed.

extraExtraUseCountNodeCount

Specifies the number of times the OS tired to allocate an additional use count node for a TTS transaction but failed.

errorReadingLastFATCount

Specifies the number of times the OS received an error reading the data in the last FAT.

someoneElseUsingThisFileCount

Specifies the number of times the OS was reading a file that another process was also reading.

FSE_MM_OBJ_INFO

Returns media management information.

Service: Server Environment

Defined In: nwfse.h

Structure

```
typedef struct
{
   MEDIA_INFO_DEF   MediaInfo ;
   nuint32          mediaType ;
   nuint32          cartridgeType ;
   nuint32          unitSize ;
   nuint32          blockSisze ;
   nuint32          capacity ;
   nuint32          preferredUnitSize ;
   nuint8           name [64];
   nuint32          type ;
   nuint32          status ;
   nuint32          functionMask ;
   nuint32          controlMask ;
   nuint32          parentCount ;
   nuint32          siblingCount ;
   nuint32          childCount ;
   nuint32          specificInfoSize ;
   nuint32          objectUniqueID ;
   nuint32          mediaSlot ;
} FSE_MM_OBJ_INFO;
```

Delphi Structure

```
uses calwin32

FSE_MM_OBJ_INFO = packed Record
    MediaInfo : MEDIA_INFO_DEF;
    mediaType : nuint32;
    cartridgeType : nuint32;
    unitSize : nuint32;
    blockSize : nuint32;
    capacity : nuint32;
    preferredUnitSize : nuint32;
    name : Array[0..63] Of nuint8;
    mediaManagerType : nuint32;
    status : nuint32;
    functionMask : nuint32;
    controlMask : nuint32;
    parentCount : nuint32;
    siblingCount : nuint32;
    childCount : nuint32;
    specificInfoSize : nuint32;
```

```
   objectUniqueID : nuint32;
   mediaSlot : nuint32;
End;
```

Fields

MediaInfo

> Points to MEDIA_INFO_DEF (page 219).

mediaType

> Specifies the media type of the object, as follows:

```
0   Hard disk
1   CD-ROM
2   WORM device
3   Tape device
4   Magneto-optical device
```

cartridgeType

> Specifies the type of cartridge or magazine the device can use, as follows:

```
0x00000000   Fixed media
0x00000001   5.25 floppy
0x00000002   3.5 floppy
0x00000003   5.25 optical
0x00000004   3.5 optical
0x00000005   0.5 tape
0x00000006   0.25 tape
0x00000007   8 mm tape
0x00000008   4 mm tape
0x00000009   Bernoulli disk
```

unitSize

> Specifies the number of bytes per sector.

blockSize

> Specifies the maximum number of sectors that the driver can handle per I/O request.

capacity

> Specifies the maximum number of sectors on the device.

preferredUnitSize

> Specifies the preferred transfer unit size for the device (from 512B to 1KB for formatted devices).

name

> Specifies the length-preceded string representing the name of the object.

type

> Specifies the media manager database type:

```
0    AdApter Object
1    Changer object
```

```
2     Device object
4     Media object
5     Partition object
6     Slot object
7     Hotfix object
8     Mirror object
9     Parity object
10    Volume segment object
11    Volume object
12    Clone object
14    Magazine object
15    Virtual device object
FFFF  Unknown object type
```

status

Specifies the status mask for the object:

```
FSE_OBJECT_ACTIVATED            0x00000001
FSE_OBJECT_CREATED              0x00000002
FSE_OBJECT_SCRAMBLED            0x00000004
FSE_OBJECT_RESERVED             0x00000010
FSE_OBJECT_BEING_IDENTIFIED     0x00000020
FSE_OBJECT_MAGAZINE_LOADED      0x00000040
FSE_OBJECT_FAILURE              0x00000080
FSE_OBJECT_REMOVABLE            0x00000100
FSE_OBJECT_READ_ONLY            0x00000200
FSE_OBJECT_IN_DEVICE            0x00010000
FSE_OBJECT_ACCEPTS_MAGAZINES    0x00020000
FSE_OBJECT_IS_IN_A_CHANGER      0x00040000
FSE_OBJECT_LOADABLE             0x00080000
FSE_OBJECT_BEING_LOADED         0x00080000
FSE_OBJECT_DEVICE_LOCK          0x01000000
FSE_OBJECT_CHANGER_LOCK         0x02000000
FSE_OBJECT_REMIRRORING          0x04000000
FSE_OBJECT_SELECTED             0x08000000
```

functionMask

Specifies the function mask:

```
0X0001  Random read
0x0002  Random write
0x0004  Random write once
0x0008  Sequential read
0x0010  Sequential write
0x0020  Reset end of tape
0x0040  Single file mark
0x0080  Multiple file mark
0x0100  Single set mark
0x0200  Multiple set mark
0x0400  Space data blocks
0x0800  Locate data blocks
0x1000  Position partition
0x2000  Position media
```

controlMask

Specifies the control mask:

```
0x0001  FSE_ACTIVATE_DEACTIVE
0x0002  FSE_MOUNT_DISMOUNT
0x0004  FSE_SELECT_UNSELECT
0x0008  FSE_LOCK_UNLOCK
0x0010  FSE_EJECT
0x0020  FSE_MOVE
```

parentCount

Specifies the number of parent objects for the device, usually 1.

siblingCount

Specifies the number of sibling objects for the device.

childCount

Specifies the number of child objects for the device.

specificInfoSize

Specifies the size of the data structures that will be returned.

objectUniqueID

Specifies the number which identifies the device in the media manager database.

mediaSlot

Specifies the number of the slot the device occupies.

FSE_SERVER_INFO

Returns information about the NetWare server.

Service: Server Environment

Defined In: nwfse.h

Structure

```
typedef struct {
   nuint32   replyCanceledCount ;
   nuint32   writeHeldOffCount ;
   nuint32   writeHeldOffWithDupRequest ;
   nuint32   invalidRequestTypeCount ;
   nuint32   beingAbortedCount ;
   nuint32   alreadyDoingReallocCount ;
   nuint32   deAllocInvalidSlotCount ;
   nuint32   deAllocBeingProcessedCount ;
   nuint32   deAllocForgedPacketCount ;
   nuint32   deAllocStillTransmittingCount ;
   nuint32   startStationErrorCount ;
   nuint32   invalidSlotCount ;
   nuint32   beingProcessedCount ;
   nuint32   forgedPacketCount ;
   nuint32   stillTransmittingCount ;
   nuint32   reExecuteRequestCount ;
   nuint32   invalidSequenceNumCount ;
   nuint32   duplicateIsBeingSentAlreadyCnt ;
   nuint32   sentPositiveAcknowledgeCount ;
   nuint32   sentDuplicateReplyCount ;
   nuint32   noMemForStationCtrlCount ;
   nuint32   noAvailableConnsCount ;
   nuint32   reallocSlotCount ;
   nuint32   reallocSlotCameTooSoonCount ;
} FSE_SERVER_INFO;
```

Delphi Structure

```
uses calwin32

FSE_SERVER_INFO = packed Record
   replyCanceledCount : nuint32;
   writeHeldOffCount : nuint32;
   writeHeldOffWithDupRequest : nuint32;
   invalidRequestTypeCount : nuint32;
   beingAbortedCount : nuint32;
   alreadyDoingReallocCount : nuint32;
   deAllocInvalidSlotCount : nuint32;
   deAllocBeingProcessedCount : nuint32;
   deAllocForgedPacketCount : nuint32;
   deAllocStillTransmittingCount : nuint32;
   startStationErrorCount : nuint32;
```

```
      invalidSlotCount : nuint32;
      beingProcessedCount : nuint32;
      forgedPacketCount : nuint32;
      stillTransmittingCount : nuint32;
      reExecuteRequestCount : nuint32;
      invalidSequenceNumCount : nuint32;
      duplicateIsBeingSentAlreadyCnt : nuint32;
      sentPositiveAcknowledgeCount : nuint32;
      sentDuplicateReplyCount : nuint32;
      noMemForStationCtrlCount : nuint32;
      noAvailableConnsCount : nuint32;
      reallocSlotCount : nuint32;
      reallocSlotCameTooSoonCount : nuint32;
   End;
```

Fields

replyCanceledCount

Specifies the number of replies that were cancelled because the connection was reallocated
while the request was being processed.

writeHeldOffCount

Specifies the number of times that writes were delayed because of a pending TTS(tm)
transaction or cache busy condition.

writeHeldOffWithDupRequest

Specifies the number of times that writes were cancelled since a duplicate request was received.
(DO EITHER OF THESE REQUESTS GET WRITTEN? HOW ARE THEY PROCESSED-
ORIGINAL OR DUPLICATE? HOW CAN THE GET THEM TO BE PROCESSED?)

invalidRequestTypeCount

Specifies the number of packets received which had an invalid request type or were received
after the server was downed.

beingAbortedCount

Specifies the number of packets received for a connection being terminated.

alreadyDoingReallocCount

Specifies the number of times that a connection is requested when a connection already exists.

deAllocInvalidSlotCount

Specifies the number of times an attempt was made to deallocate a connection slot which was
not valid.

deAllocBeingProcessedCount

Specifies the number of times the server was deallocated because requests were still being
processed.

deAllocForgedPacketCount

Specifies the number of times the server was deallocated because a forget packet was received.

deAllocStillTransmittingCount

Specifies the number of times the server was deallocated because information was still being transmitted.

startStationErrorCount

Specifies the number of times the server was unable to allocate a connection for any reason.

invalidSlotCount

Specifies the number of requests received for an invalid connection slot.

beingProcessedCount

Specifies the number of times a duplicate request was received during processing of the first request.

forgedPacketCount

Specifies the number of suspicious invalid packets received.

stillTransmittingCount

Specifies the number of times a new request is received before a reply to a previous request has been sent.

reExecuteRequestCount

Specifies the number of times the requester did not receive the reply and the request had to be reprocessed.

invalidSequenceNumCount

Specifies the number of request packets the server received from a connection where the sequence number in the packet did not match the current sequence number or the next sequence number.

duplicateIsBeingSentAlreadyCnt

Specifies the number of times a duplicate reply was requested when the reply had already been sent.

sentPositiveAcknowledgeCount

Specifies the number of acknowledgments sent by the server (sent when a connection repeats a request being serviced).

sentDuplicateReplyCount

Specifies the number of request packets for which the server had to send a duplicate reply (only sent for requests the server cannot process).

noMemForStationCtrlCount

Specifies the number of times the server could not allocate memory to expand the connection table for a new connection.

noAvailableConnsCount

Specifies the number of times no slots were available in the connection table for a new connection.

reallocSlotCount

Specifies the number of times the server reallocated the same slot in the connection table for a client that logged out and relogged in.

`reallocSlotCameTooSoonCount`

Specifies the number of times that a request came from a client to relog in before that client had been completely logged out.

Remarks

It is rarely possible to create suspicious packets because of faulty equipment.

If the number specified by the `forgedPacketCount` and `invalidSequenceNumCount` fields are large, it may indicate an attempt to breach network security.

Packets with bad sequence numbers are discarded.

IPX_INFO

Returns information about the IPX protocol.

Service: Server Environment

Defined In: nwfse.h

Structure

```
typedef struct
{
   nuint32   IPXSendPacketCount ;
   nuint16   IPXMalformPacketCount ;
   nuint32   IPXGetECBRequestCount ;
   nuint32   IPXGetECBFailCount ;
   nuint32   IPXAESEventCount ;
   nuint16   IPXPostponedAESCount ;
   nuint16   IPXMaxConfiguredSocketCount ;
   nuint16   IPXMaxOpenSocketCount ;
   nuint16   IPXOpenSocketFailCount ;
   nuint32   IPXListenECBCount ;
   nuint16   IPXECBCancelFailCount ;
   nuint16   IPXGetLocalTargetFailCount ;
} IPX_INFO;
```

Delphi Structure

```
uses calwin32

IPX_INFO = packed Record
   IPXSendPacketCount : nuint32;
   IPXMalformPacketCount : nuint16;
   IPXGetECBRequestCount : nuint32;
   IPXGetECBFailCount : nuint32;
   IPXAESEventCount : nuint32;
   IPXPostponedAESCount : nuint16;
   IPXMaxConfiguredSocketCount : nuint16;
   IPXMaxOpenSocketCount : nuint16;
   IPXOpenSocketFailCount : nuint16;
   IPXListenECBCount : nuint32;
   IPXECBCancelFailCount : nuint16;
   IPXGetLocalTargetFailCount : nuint16;
  End;
```

Fields

IPXSendPacketCount

   Specifies the number of IPX packets sent by the server.

IPXMalformPacketCount

   Specifies the number of IPX packets discarded because they were malformed.

IPXGetECBRequestCount

Specifies the number of ECB requests.

IPXGetECBFailCount

Specifies the number of times an ECB was requested, but could not be supplied.

IPXAESEventCount

Specifies the number of AES events scheduled.

IPXPostponedAESCount

Specifies the number of AES events that could not be scheduled, but were placed in a waiting list.

IPXMaxConfiguredSocketCount

Specifies the maximum number of sockets that can be open at one time.

IPXMaxOpenSocketCount

Specifies the maximum number of sockets open at one time since the server was booted.

IPXOpenSocketFailCount

Specifies the number of times a request to open a socket failed.

IPXListenECBCount

Specifies the number of ECBs listening for a packet.

IPXECBCancelFailCount

Specifies the number of ECB listens that were cancelled.

IPXGetLocalTargetFailCount

Specifies the number of times the server failed to find the target.

KNOWN_NET_INFO

Returns information about known networks.

Service: Server Environment

Defined In: nwfse.h

Structure

```
typedef struct
{
   nuint32   netIDNumber ;
   nuint16   hopsToNet ;
   nuint16   netStatus ;
   nuint16   timeToNet ;
} KNOWN_NET_INFO;
```

Delphi Structure

```
uses calwin32

KNOWN_NET_INFO = packed Record
    netIDNumber : nuint32;
    hopsToNet : nuint16;
    netStatus : nuint16;
    timeToNet : nuint16;
  End;
```

Fields

netIDNumber

   Specifies the network ID number that is used by the server.

hopsToNet

   Specifies the number of routers to cross to get to the network.

netStatus

   Specifies the status of the network.

timeToNet

   Specifies the number of clock ticks to the network (roundtrip).

LAN_COMMON_INFO

Returns information about traffic on the LAN.

Service: Server Environment

Defined In: nwfse.h

Structure

```
typedef struct
{
   nuint32   notSupportedMask ;
   nuint32   totalTxPacketCount ;
   nuint32   totalRxPacketCount ;
   nuint32   noECBAvailableCount ;
   nuint32   packetTxTooBigCount ;
   nuint32   packetTxTooSmallCount ;
   nuint32   packetRxOverflowCount ;
   nuint32   packetRxTooBigCount ;
   nuint32   packetRxTooSmallCount ;
   nuint32   packetTxMiscErrorCount ;
   nuint32   packetRxMiscErrorCount ;
   nuint32   retryTxCount ;
   nuint32   checksumErrorCount ;
   nuint32   hardwareRxMismatchCount ;
   nuint32   reserved [50];
} LAN_COMMON_INFO;
```

Delphi Structure

```
uses calwin32

  LAN_COMMON_INFO = packed Record
    notSupportedMask : nuint32;
    totalTxPacketCount : nuint32;
    totalRxPacketCount : nuint32;
    noECBAvailableCount : nuint32;
    packetTxTooBigCount : nuint32;
    packetTxTooSmallCount : nuint32;
    packetRxOverflowCount : nuint32;
    packetRxTooBigCount : nuint32;
    packetRxTooSmallCount : nuint32;
    packetTxMiscErrorCount : nuint32;
    packetRxMiscErrorCount : nuint32;
    retryTxCount : nuint32;
    checksumErrorCount : nuint32;
    hardwareRxMismatchCount : nuint32;
    reserved : Array[0..49] Of nuint32;
  End;
```

Fields

notSupportedMask

Specifies a bit mask representing the fields in the statistics table. If the bit is 0, the counter is supported; if it is 1, the counter is not supported.

totalTxPacketCount

Specifies the total number of packets transmitted by the LAN board.

totalRxPacketCount

Specifies the total number of packets that were received by the LAN board.

noECBAvailableCount

Specifies the number of times the LAN board failed to get a receive ECB.

packetTxTooBigCount

Specifies the number of times the send packet was too big for this LAN board to send.

packetTxTooSmallCount

Specifies the number of times the send packet was too small for this LAN board to send.

packetRxOverflowCount

Specifies the number of times the LAN board's receive buffers overflowed.

packetRxTooBigCount

Specifies the number of times this LAN board could not receive a packet because the packet was too big.

packetRxTooSmallCount

Specifies the number of times this LAN board could not receive a packet because the packet was too small.

packetTxMiscErrorCount

Specifies the number of times any kind of transmit error occurred for this LAN board.

packetRxMiscErrorCount

Specifies the number of times any kind of receive error occurred for this LAN board.

retryTxCount

Specifies the number of times the LAN board retried a transmit because of failure.

checksumErrorCount

Specifies the number of times a checksum error occurred for this LAN board.

hardwareRxMismatchCount

Specifies a counter that may be incremented when a packet is received which does not pass length consistency checks.

reserved

Reserved for future use.

LAN_CONFIG_INFO

Get network card (LAN card) configuration information.

Service: Server Environment

Defined In: nwfse.h

Structure

```
typedef struct
{
   nuint8    DriverCFG_MajorVersion ;
   nuint8    DriverCFG_MinorVersion ;
   nuint8    DriverNodeAddress [6];
   nuint16   DriverModeFlags ;
   nuint16   DriverBoardNum ;
   nuint16   DriverBoardInstance ;
   nuint32   DriverMaxSize ;
   nuint32   DriverMaxRecvSize ;
   nuint32   DriverRecvSize ;
   nuint32   reserved1 [3];
   nuint16   DriverCardID ;
   nuint16   DriverMediaID ;
   nuint16   DriverTransportTime ;
   nuint8    DriverReserved [16];
   nuint8    DriverMajorVersion ;
   nuint8    DriverMinorVersion ;
   nuint16   DriverFlags ;
   nuint16   DriverSendRetries ;
   nuint32   DriverLink ;
   nuint16   DriverSharingFlags ;
   nuint16   DriverSlot ;
   nuint16   DriverIOPortsAndLengths [4];
   nuint32   DriverMemDecode0 ;
   nuint16   DriverLength0 ;
   nuint32   DriverMemDecode1 ;
   nuint16   DriverLength1 ;
   nuint8    DriverInterrupt [2];
   nuint8    DriverDMAUsage [2];
   nuint32   Reserved2 [3];
   nuint8    DriverLogicalName [18];
   nuint32   DriverLinearMem [2];
   nuint16   DriverChannelNum ;
   nuint8    DriverIOReserved [6];
} LAN_CONFIG_INFO;
```

Delphi Structure

```
uses calwin32

  LAN_CONFIG_INFO = packed Record
    DriverCFG_MajorVersion : nuint8;
```

```
      DriverCFG_MinorVersion : nuint8;
      DriverNodeAddress : Array[0..5] Of nuint8;
      DriverModeFlags : nuint16;
      DriverBoardNum : nuint16;
      DriverBoardInstance : nuint16;
      DriverMaxSize : nuint32;
      DriverMaxRecvSize : nuint32;
      DriverRecvSize : nuint32;
      Reserved1 : Array[0..2] Of nuint32;
      DriverCardID : nuint16;
      DriverMediaID : nuint16;
      DriverTransportTime : nuint16;
      DriverReserved : Array[0..15] Of nuint8;
      DriverMajorVersion : nuint8;
      DriverMinorVersion : nuint8;
      DriverFlags : nuint16;
      DriverSendRetries : nuint16;
      DriverLink : nuint32;
      DriverSharingFlags : nuint16;
      DriverSlot : nuint16;
      DriverIOPortsAndLengths : Array[0..3] Of nuint16;
      DriverMemDecode0 : nuint32;
      DriverLength0 : nuint16;
      DriverMemDecode1 : nuint32;
      DriverLength1 : nuint16;
      DriverInterrupt : Array[0..1] Of nuint8;
      DriverDMAUsage : Array[0..1] Of nuint8;
      Reserved2 : Array[0..2] Of nuint32;
      DriverLogicalName : Array[0..17] Of nuint8;
      DriverLinearMem : Array[0..1] Of nuint32;
      DriverChannelNum : nuint16;
      DriverIOReserved : Array[0..5] Of nuint8;
   End;
```

Fields

DriverCFG_MajorVersion

> Specifies the Novell® defined major version number of the configuration table.

DriverCFG_MinorVersion

> Specifies the Novell defined minor version of the configuration table.

DriverNodeAddress

> Specifies the node address of the LAN board.

DriverModeFlags

> Specifies the mode supported by the driver:

> 0x0001 Specifies whether the driver was real or a dummy; set to 1.
> 0x0002 Specifies if the driver uses DMA.
> 0x0004 Specifies to routers to pass router table changes when they occur, rather than forwarding all RIP and SAP packets; set only if but 4 is set.

0x0008 Specifies if the driver supports multicasting.

0x0010 Specifies if the driver can bind with a protocol stack without providing a network number.

0x0030 Specifies if the driver supports raw sends, no prepending any hardware header.

0x0400 Specifies if the HSM can handle fragmented RCBs.

0x2000 Specifies if the HSM can handle promiscuous RCBs.

0xC000 Specifies the driver node address, as follows:

```
00 Format is unspecified; the node address is assumed to be in the
native format of the physical layer.
01 Illegal combination
10 Driver node address is canonical
11 Driver node address is noncanonical
```

DriverBoardNum

Specifies the logical board number (1-255) assigned to the LAN board by the LSL(tm) service.

DriverBoardInstance

Specifies the number of the physical card the logical board is using.

DriverMaxSize

Specifies the maximum send or receive packet size in bytes the board can handle.

DriverMaxRecvSize

Specifies the maximum packet size in bytes that the LAN board can receive.

DriverRecvSize

Specifies the maximum packet size in bytes a protocol stack can send or receive using this board.

reserved1

Is reserved (pass zero).

DriverCardID

Specifies the number assigned to the LAN board by IMSP.

DriverMediaID

Specifies the number identifying the link-level envelope used by the MLID.

DriverTransportTime

Specifies the time in ticks to transmit a 576-byte packet.

DriverReserved

Reserved for future use (currently set to zero).

DriverMajorVersion

Specifies the major version number of the MLID.

DriverMinorVersion

Specifies the minor version number of the MLID.

DriverFlags

Specifies a bit map showing the architecture supported by the MLID:

0x0001	EISA
0x0002	ISA
0x0004	MCA
0x0100	Hub management
0x0600	Multicast filtering and format: 00 LAN medium defaults 01 Illegal combination

The following bits are set if the board can share:

0x0020	Primary interrupt
0x0040	Secondary interrupt
0x0080	DMA channel 0
0x0100	DMA channel 1

The following bits are set if:

0x0200	A command line information string to place in AUTOEXEC.NCF is available.
0x0400	To prevent default information from the AUTOEXEC.NCF, this bit overrides the setting of bit 9.

DriverSendRetries

Contains the number of times that the MLID retries send events before aborting the send.

DriverLink

Used by the LSL.

DriverSharingFlags

Contains a bit map defining the sharing abilities of the MLID.

DriverSlot

Specifies the slot number of the board if installed in MCA or EISA machine; otherwise it is 0.

DriverIOPortsAndLengths

Each WORD is defined below:

Word 1	Primary base I/O port
Word 2	Number of I/O ports beginning with primary base I/O port
Word 3	Secondary base I/O port
Word 4	Number of I/O ports beginning with secondary base I/O port

DriverMemDecode0

Specifies the absolute primary memory address that the LAN board uses.

DriverLength0

Specifies the amount of memory in paragraphs the board uses starting at
`DriverMemDecode0`

DriverMemDecode1

Specifies the absolute secondary memory address the board uses.

DriverLength1

Specifies the amount of memory in paragraphs the board uses, starting at
`DriverMemDecode1.`

DriverInterrupt

Specifies the primary interrupt in the first byte; secondary interrupt in the secondary byte. FFh
means not used.

DriverDMAUsage

Specifies the primary DMA channel used in the board in the first byte; secondary DMA
channel in the second byte. FFh means not used.

Reserved2

Specifies the logical name of the LAN driver, given at load time.

DriverLogicalName

Specifies the logical name of the LAN driver, given at load time.

DriverLinearMem

Specifies the addresses of `DriverMemDecode0` and `DriverMemDecode1` in the first and
second LONGS.

DriverChannelNum

Specifies the multichannel adapters. It holds the channel number of the NIC to use.

DriverIOReserved

Reserved for the LSL.

LSL_INFO

Get LSL (Link Support Layer) information.

Service: Server Environment

Defined In: nwfse.h

Structure

```
typedef struct
{
   nuint32   rxBufs ;
   nuint32   rxBufs75PerCent ;
   nuint32   rxBufsCheckedOut ;
   nuint32   rxBufMaxSize ;
   nuint32   maxPhysicalSize ;
   nuint32   lastTimeRxBufAllocated ;
   nuint32   maxNumsOfProtocols ;
   nuint32   maxNumsOfMediaTypes ;
   nuint32   totalTXPackets ;
   nuint32   getECBBfrs ;
   nuint32   getECBFails ;
   nuint32   AESEventCounts ;
   nuint32   postponedEvents ;
   nuint32   ECBCxlFails ;
   nuint32   validBfrsReused ;
   nuint32   enqueuedSendCount ;
   nuint32   totalRXPackets ;
   nuint32   unclaimedPackets ;
   nuint8    StatisticsTableMajorVersion ;
   nuint8    StatisticsTableMinorVersion ;
} LSL_INFO;
```

Delphi Structure

```
uses calwin32

 LSL_INFO = packed Record
   rxBufs : nuint32;
   rxBufs75PerCent : nuint32;
   rxBufsCheckedOut : nuint32;
   rxBufMaxSize : nuint32;
   maxPhysicalSize : nuint32;
   lastTimeRxBufAllocated : nuint32;
   maxNumsOfProtocols : nuint32;
   maxNumsOfMediaTypes : nuint32;
   totalTXPackets : nuint32;
   getECBBfrs : nuint32;
   getECBFails : nuint32;
   AESEventCounts : nuint32;
   postponedEvents : nuint32;
   ECBCxlFails : nuint32;
```

```
      validBfrsReused : nuint32;
      enqueuedSendCount : nuint32;
      totalRXPackets : nuint32;
      unclaimedPackets : nuint32;
      StatisticsTableMajorVersion : nuint8;
      StatisticsTableMinorVersion : nuint8;
   End;
```

Fields

rxBufs

   Specifies the total number of LSL receive buffers.

rxBufs75PerCent

   Specifies the number of LSL receive buffers that must be in use before a warning message is issued that buffers are getting low.

rxBufsCheckedOut

   Specifies the number of LSL buffers in use.

rxBufMaxSize

   Specifies the size of the data portion of the ECBs in bytes.

maxPhysicalSize

   Specifies the total size of the ECB in bytes.

lastTimeRxBufAllocated

   Specifies the last time in ticks a buffer was checked out.

maxNumsOfProtocols

   Specifies the number of protocol stacks supported by the OS.

maxNumsOfMediaTypes

   Specifies the number of frame types supported by the OS.

totalTXPackets

   Specifies the number of packet transmit requests.

getECBBfrs

   Contains the number of ECBs that were requested.

getECBFails

   Specifies the number of times an ECB request failed.

AESEventCounts

   Specifies the total number of AES events that have been processed.

postponedEvents

   Specifies the total number of AES events postponed because of critical sections.

ECBCxlFails

Specifies the number of AES cancel requests that failed because the event was not found on the AES list.

validBfrsReused

Specifies the number of ECBs in the hold queue that were reused before they were removed from the hold queue.

enqueuedSendCount

Specifies the number of send events in the queue that have occurred.

totalRXPackets

Specifies the total number of received incoming packets.

unclaimedPackets

Specifies the total number of unclaimed incoming packets.

StatisticsTableMajorVersion

Contains the major version of the LSL statistics table.

StatisticsTableMinorVersion

Contains the minor version of the LSL statistics table.

MEDIA_INFO_DEF

Returns information on the media manager object.

Service: Server Environment

Defined In: nwfse.h

Structure

```
typedef struct
{
   nuint8    label [64];
   nuint32   identificationType ;
   nuint32   identificationTimeStamp ;
} MEDIA_INFO_DEF;
```

Delphi Structure

```
uses calwin32

 MEDIA_INFO_DEF = packed Record
    mediaLabel : Array[0..63] Of nuint8;
    identificationType : nuint32;
    identificationTimeStamp : nuint32;
  End;
```

Fields

label

   Specifies the name of the object.

identificationType

   Specifies the Novell assigned number for the object.

identificationTimeStamp

   Specifies the DOS timestamp of the object.

MLID_BOARD_INFO

Contains information about each Multiple Link Interface Driver (MLID).

Service: Server Environment

Defined In: nwfse.h

Syntax

```
typedef struct
{
   nuint32   protocolBoardNum;
   nuint16   protocolNumber;
   nuint8    protocolID[6];
   nuint8    protocolName[16];
} MLID_BOARD_INFO;
```

Delphi Syntax

```
Type
 MLID_BOARD_INFO = packed Record
    protocolBoardNum : nuint32;
    protocolNumber : nuint16;
    protocolID: Array[0..5] of nuint8;
    protocolName : Array[0..15] of nuint8;
 End;
```

Fields

protocolBoardNum

Specifies the board number the protocol is using.

protocolNumber

Specifies the protocol number.

protocolID

Specifies the protocol ID.

protocolName

Specifies the protocol name as a length-preceded string.

Remarks

protocolNumber and protocolID can have the following values:

Name & Ethernet Frame Type	Number	ID (from Hi-Lo)					
		Byte 5	Byte 4	Byte 3	Byte 2	Byte 1	Byte 0
IPX: 802.2	0	0xE0	0x00	0x00	0x00	0x00	0x00

Name & Ethernet Frame Type	Number	ID (from Hi-Lo)					
		Byte 5	Byte 4	Byte 3	Byte 2	Byte 1	Byte 0
IPX: 802.3		0x00	0x00	0x00	0x00	0x00	0x00
IPX: Ethernet II		0x37	0x81	0x00	0x00	0x00	0x00
IP	1	0x00	0x08	0x00	0x00	0x00	0x00
ARP	2	0x06	0x08	0x00	0x00	0x00	0x00

NETWARE_PRODUCT_VERSION

Returns NetWare product version information (major version, minor version and revision).

Service: Server Environment

Defined In: nwserver.h

Structure

```
typedef struct
{
   nuint16   majorVersion;
   nuint16   minorVersion;
   nuint16   revision;
} NETWARE_PRODUCT_VERSION;
```

Delphi Structure

```
uses calwin32

  NETWARE_PRODUCT_VERSION = Record
    majorVersion : nuint16;
    minorVersion : nuint16;
    revision : nuint16;
  End;
```

Fields

majorVersion

> Specifies the major version number of the NetWare product.

minorVersion

> Specifies the minor version number of the NetWare product.

revision

> Specifies the version revision letter of the NetWare product. The revision letter can be expressed as a number where a = 0, b = 1, and so forth.

NLM_INFO

Returns information about an NLM.

Service: Server Environment

Defined In: nwfse.h

Structure

```
typedef struct
{
   nuint32   identificationNum ;
   nuint32   flags ;
   nuint32   type ;
   nuint32   parentID ;
   nuint32   majorVersion ;
   nuint32   minorVersion ;
   nuint32   revision ;
   nuint32   year ;
   nuint32   month ;
   nuint32   day ;
   nuint32   allocAvailableBytes ;
   nuint32   allocFreeCount ;
   nuint32   lastGarbageCollection ;
   nuint32   messageLanguage ;
   nuint32   numOfReferencedPublics ;
} NLM_INFO;
```

Delphi Structure

```
uses calwin32

 NLM_INFO = packed Record
    identificationNum : nuint32;
    flags : nuint32;
    NLMtype : nuint32;
    parentID : nuint32;
    majorVersion : nuint32;
    minorVersion : nuint32;
    revision : nuint32;
    year : nuint32;
    month : nuint32;
    day : nuint32;
    allocAvailableBytes : nuint32;
    allocFreeCount : nuint32;
    lastGarbageCollection : nuint32;
    messageLanguage : nuint32;
    numOfReferencedPublics : nuint32;
  End;
```

Fields

identificationNum

Specifies the number assigned to the NLM when it was loaded.

flags

Specifies a bit mask. Bits are defined as follows:

```
0x0001 = REENTRANT
0x0002 = MULTIPLE
0x0004 = SYNCHRONIZE
0x0008 = PSEUDOPREEMPTION
```

type

Specifies the type:

```
0 = NLM_GENERIC
1 = LAN_DRIVER
2 = DSK_DRIVER
3 = NAM_SPACE
4 = NLM_UTILITY
5 = MIRRORED_SERVER_LINK
6 = NLM_OS
7 = NLM_PAGED_HIGH_OS
8 = HOST_ADAPTER_MODULE
9 = CUSTOM_DEVICE_MODULE
10 = NLM_FILE_SYSTEM
11 = NLM_REAL_MODE
12 = GHOST_TYPE
13 = SMP_NORMAL_TYPE
14 = NIOS_TYPE_NLM
15 = CIOS_CAD_TYPE
16 = CIOS_CLS_TYPE
20 through 32 = NICI (Novell International Cryptographic
Infrastructure)
```

parentID

Specifies the number of the NLM that caused this NLM to be loaded.

majorVersion

Specifies the major version of the NLM.

minorVersion

Specifies the minor version of the NLM.

revision

Specifies the revision letter of the NLM.

year

Specifies the timestamp of the NLM.

month

Specifies the timestamp of the NLM.

day

Specifies the timestamp of the NLM.

allocAvailableBytes

Specifies the bytes available for allocation by the NLM.

allocFreeCount

Specifies the number of bytes freed that can be reclaimed.

lastGarbageCollection

Specifies the last time garbage collection was done for the NLM.

messageLanguage

Specifies the number representing the language the NLM uses.

numOfReferencedPublics

Specifies the number of external symbols referenced by the NLM.

NWFSE_ACCT_INFO

Returns Server Environment accounting information. Used by NWGetServerConnInfo (page 143).

Service: Server Environment

Defined In: nwfse.h

Structure

```
typedef struct
{
   nuint32   holdTime;
   nuint32   holdAmt;
   nuint32   chargeAmt;
   nuint32   heldConnectTimeInMinutes;
   nuint32   heldRequests;
   nuint8    heldBytesRead[6];
   nuint8    heldBytesWritten[6];
} NWFSE_ACCT_INFO;
```

Delphi Syntax

```
uses calwin32

 NWFSE_ACCT_INFO  = packed RECORD
   holdTime : nuint32;
   holdAmt : nuint32;
   chargeAmt : nuint32;
   heldConnectTimeInMinutes : nuint32;
   heldRequests : nuint32;
   heldBytesRead : Array[1..6] of nuint8;
   heldBytesWritten : Array[1..6] of nuint8;
 End;
```

Fields

holdTime

Specifies the amount of time that the specified amount will be held before being charged to the object's account balance.

holdAmt

Specifies the amount to be held against an object's account balance.

chargeAmt

Specifies the amount to be charged to an object's account balance.

heldConnectTimeInMinutes

Specifies the connect time (in minutes) that is held before being charged to an object's account.

heldRequests

Specifies the number of requests held for accounting purposes.

`heldBytesRead`

Specifies the number of bytes the user read that have a hold on them for accounting purposes.

`heldBytesWritten`

Specifies the number of bytes the user wrote that have a hold on them for accounting purposes.

Remarks

The hold fields are designed to hold information as the server is reserving and calculating how much of the object's account balance will be charged. Once the charge is made against the object's account, the hold fields are cleared.

NWFSE_ACTIVE_CONN_LIST

Returns the Active Connection List by type. Used by NWGetActiveConnListByType (page 45).

Service: Server Environment

Defined In: nwfse.h

Structure

```
typedef struct
{
   SERVER_AND_VCONSOLE_INFO   serverTimeAndVConsoleInfo ;
   nuint16                    reserved ;
   nuint8                     activeConnBitList [512];
} NWFSE_ACTIVE_CONN_LIST;
```

Delphi Structure

```
uses calwin32

  NWFSE_ACTIVE_CONN_LIST = packed Record
    serverTimeAndVConsoleInfo : SERVER_AND_VCONSOLE_INFO;
    reserved : nuint16;
    padding : nuint16;
    activeConnBitList : Array[0..511] Of nuint8;
  End;
```

Fields

serverTimeAndVConsoleInfo

Specifies the SERVER_AND_VCONSOLE_INFO structure containing the time since the server was brought up. This time is returned in ticks (approximately 1/18 of a second). When this parameter reaches 0xFFFFFFFF, it wraps to zero.

reserved

Reserved for future use.

activeConnBitList

Indicates active connections. An array of 512 bytes is returned where a bit is set for each active connection. The connection number is determined by its position in the array.

NWFSE_ACTIVE_LAN_BOARD_LIST

Returns a list of active LAN boards in the server. Used by NWGetActiveLANBoardList (page 47).

Service: Server Environment

Defined In: nwfserver.h

Structure

```
typedef struct
{
    SERVER_AND_VCONSOLE_INFO    serverTimeAndVConsoleInfo:
    nuint16                     reserved ;
    nuint32                     MaxNumOfLANs ;
    nuint32                     LANLoadedCount ;
    nuint32                     boardNums [FSE_MAX_NUM_OF_LANS];
} NWFSE_ACTIVE_LAN_BOARD_LIST;
```

Delphi Structure

```
uses calwin32

 NWFSE_ACTIVE_LAN_BOARD_LIST = packed Record
    serverTimeAndVConsoleInfo : SERVER_AND_VCONSOLE_INFO;
    reserved : nuint16;
    padding  : nuint16;
    MaxNumOfLANs : nuint32;
    LANLoadedCount : nuint32;
    boardNums : Array[0..FSE_MAX_NUM_OF_LANS-1] Of nuint32;
  End;
```

Fields

serverTimeAndVConsoleInfo

Specifies the SERVER_AND_VCONSOLE_INFO structure containing the time since the server was brought up. This time is returned in ticks (approximately 1/18 of a second). When this parameter reaches 0xFFFFFFFF, it wraps to zero.

reserved

Reserved for future use.

MaxNumOfLANs

Specifies the maximum number of LAN boards that can be used on the server.

LANLoadedCount

contains the number of LAN boards returned by this call to SSGetActiveLANBoardList (page 482). To retrieve the rest of the board numbers, call this function again, using the total number of items returned by all previous calls to SSGetActiveLANBoardList plus 1 as startNumber.

boardNums

Contains the first LAN board number. The first number is followed by board numbers for each LAN board.

NWFSE_ACTIVE_STACKS

Returns information about active protocol stacks. Used by NWGetActiveProtocolStacks (page 49).

Service: Server Environment

Defined In: nwfse.h

Structure

```
typedef struct
{
    SERVER_AND_VCONSOLE_INFO    serverTimeAndVConsoleInfo:
    nuint16                     reserved ;
    nuint32                     maxNumOfStacks ;
    nuint32                     stackCount ;
    nuint32                     nextStartNum ;
    STACK_INFO                  stackInfo [FSE_MAX_NUM_OF_STACKINFO];
} NWFSE_ACTIVE_STACKS;
```

Delphi Structure

```
uses calwin32

 NWFSE_ACTIVE_STACKS = packed Record
    serverTimeAndVConsoleInfo : SERVER_AND_VCONSOLE_INFO;
    reserved : nuint16;
    padding  : nuint16;
    maxNumOfStacks : nuint32;
    stackCount : nuint32;
    nextStartNum : nuint32;
    stackInfo : Array[0.. FSE_MAX_NUM_OF_STACKINFO -1] Of STACK_INFO;
  End;
```

Fields

serverTimeAndVConsoleInfo

Specifies the SERVER_AND_VCONSOLE_INFO structure containing the time since the server was brought up. This time is returned in ticks (approximately 1/18 of a second). When this parameter reaches 0xFFFFFFFF, it wraps to zero.

reserved

Reserved for future use.

maxNumOfStacks

Specifies the total number of protocol stacks.

stackCount

Specifies the number of STACK_INFO (page 311) structures in the buffer.

nextStartNum

Is the start number to use on subsequent calls.

stackInfo

Contains the first ProtocolStackInfo structure in the buffer. The fields of this structure are defined as follows:

`stackNumber` field	Contains the protocol number.
`stackName` field	The contains the protocol name.

NWFSE_AUTH_INFO

Returns Server Environment authentication information. Used by NWGetServerConnInfo (page 143).

Service: Server Environment

Defined In: nwfse.h

Structure

```
typedef struct
{
   nuint32   loginStatus;
   nuint32   loginPrivileges;
} NWFSE_AUTH_INFO;
```

Delphi Syntax

```
Type
   NWFSE_AUTH_INFO = packed RECORD
      loginStatus     : nuint32;
      loginPrivileges : nuint32;
   End;
```

Fields

loginStatus

Specifies the login status:

Number	Constant
0x00000001	LOGGED_IN
0x00000002	BEING_ABORTED
0x00000010	MAC_STATION
0x00000020	AUTHENTICATED_TEMPORARY
0x00000100	LOGOUT_IN_PROGRESS
0x00000200	INTERNAL_LOGIN
0x00000400	BINDERY_CONNECTION

loginPrivileges

Specifies the access privileges the logged in user possesses:

0x1 Supervisor privileges
0x2 Console operator privileges
0x4 Auditor privileges

NWFSE_CACHE_INFO

Returns Server Environment cache information. Used by .

Service: Server Environment

Defined In: nwfse.h

Structure

```
typedef struct
{
   SERVER_AND_VCONSOLE_INFO   serverTimeAndVConsoleInfo;
   nuint16                    reserved ;
   CACHE_COUNTERS             cacheCounters ;
   CACHE_MEM_COUNTERS         cacheMemCounters ;
   CACHE_TREND_COUNTERS       cacheTrendCounters ;
   CACHE_INFO                 cacheInformation ;
} NWFSE_CACHE_INFO;
```

Delphi Structure

```
uses calwin32

  NWFSE_CACHE_INFO = packed Record
    serverTimeAndVConsoleInfo : SERVER_AND_VCONSOLE_INFO;
    reserved : nuint16;
    padding  : nuint16;
    cacheCounters : CACHE_COUNTERS;
    cacheMemCounters : CACHE_MEM_COUNTERS;
    cacheTrendCounters : CACHE_TREND_COUNTERS;
    cacheInformation : CACHE_INFO;
  End;
```

Fields

serverTimeAndVConsoleInfo

   Points to SERVER_AND_VCONSOLE_INFO.

reserved

   Is reserved for future use.

cacheCounters

   Points to CACHE_COUNTERS.

cacheMemCounters

   Points to CACHE_MEM_COUNTERS.

cacheTrendCounters

   Points to CACHE_TREND_COUNTERS.

cacheInformation

Points to CACHE_INFO.

NWFSE_CPU_INFO

Returns Server Environment CPU information. Used by NWGetCPUInfo (page 53).

Service: Server Environment

Defined In: nwfse.h

Structure

```
typedef struct
{
   SERVER_AND_VCONSOLE_INFO    serverTimeAndVConsoleInfo ;
   nuint16                     reserved ;
   nuint32                     numOfCPUs ;
   CPU_INFO                    CPUInfo ;
} NWFSE_CPU_INFO;
```

Delphi Structure

```
uses calwin32

NWFSE_CPU_INFO = packed Record
    serverTimeAndVConsoleInfo : SERVER_AND_VCONSOLE_INFO;
    reserved : nuint16;
    padding  : nuint16;
    numOfCPUs : nuint32;
    CPUInfo : CPU_INFO;
  End;
```

Fields

serverTimeAndVConsoleInfo

Points to SERVER_AND_VCONSOLE_INFO.

reserved

Is reserved (pass 0).

numOfCPUs

Specifies the number of CPUs in the server.

CPUInfo

Points to the CPU_INFO structure.

NWFSE_DIR_CACHE_INFO

Returns Directory cache information. Used by NWGetDirCacheInfo (page 55).

Service: Server Environment

Defined In: nwfse.h

Structure

```
typedef struct
{
   SERVER_AND_VCONSOLE_INFO   serverTimeAndVConsoleInfo ;
   nuint16                    reserved ;
   DIR_CACHE_INFO             dirCacheInfo ;
} NWFSE_DIR_CACHE_INFO;
```

Delphi Structure

```
uses calwin32

 NWFSE_DIR_CACHE_INFO = packed Record
    serverTimeAndVConsoleInfo : SERVER_AND_VCONSOLE_INFO;
    reserved : nuint16;
    padding  : nuint16;
    dirCacheInfo : DIR_CACHE_INFO;
  End;
```

Fields

serverTimeAndVConsoleInfo

Specifies the SERVER_AND_VCONSOLE_INFO (page 306) structure containing the time since the server was brought up. This time is returned in ticks (approximately 1/18 of a second). When this parameter reaches 0xFFFFFFFF, it wraps to zero.

reserved

Reserved for future use.

dirCacheInfo

Contains a DIR_CACHE_INFO (page 184) structure.

NWFSE_FILE_SERVER_INFO

Returns file server information. Used by NWGetFileServerInfo (page 65).

Service: Server Environment

Defined In: nwfse.h

Structure

```
typedef struct
{
    SERVER_AND_VCONSOLE_INFO    serverTimeAndVConsoleInfo ;
    nuint16                     reserved ;
    nuint32                     NCPStationsInUseCount ;
    nuint32                     NCPPeakStationsInUseCount ;
    nuint32                     numOfNCPRequests ;
    nuint32                     serverUtilization ;
    FSE_SERVER_INFO             ServerInfo ;
    FILE_SERVER_COUNTERS        fileServerCounters ;
} NWFSE_FILE_SERVER_INFO;
```

Delphi Structure

```
uses calwin32

NWFSE_FILE_SERVER_INFO = packed Record
    serverTimeAndVConsoleInfo : SERVER_AND_VCONSOLE_INFO;
    reserved : nuint16;
    padding  : nuint16;
    NCPStationsInUseCount : nuint32;
    NCPPeakStationsInUseCount : nuint32;
    numOfNCPRequests : nuint32;
    serverUtilization : nuint32;
    ServerInfo : FSE_SERVER_INFO;
    fileServerCounters : FILE_SERVER_COUNTERS;
  End;
```

Fields

serverTimeAndVConsoleInfo

Contains console version information and the time elapsed since the server was brought up. For more information, see SERVER_AND_VCONSOLE_INFO (page 306).

reserved

Reserved for future use.

NCPStationsInUseCount

Specifies the number of workstations connected to the server.

NCPPeakStationsInUseCount

Specifies the maximum number of workstations connected at one time since the server was brought up.

numOfNCPRequests

Specifies the number of NCP requests received by the server since it was brought up.

serverUtilization

Specifies the current percentage of CPU utilization for the server.

ServerInfo

Specifies the NetWare server statistics.

fileServerCounters

Specifies the NetWare server statistics.

NWFSE_FILE_SYSTEM_INFO

Returns NetWare File Systems information. Used by NWGetNetWareFileSystemsInfo (page 112).

Service: Server Environment

Defined In: nwfse.h

Structure

```
typedef struct
{
   SERVER_AND_VCONSOLE_INFO   serverTimeAndVConsoleInfo ;
   nuint16                    reserved ;
   FSE_FILE_SYSTEM_INFO       fileSystemInfo ;
} NWFSE_FILE_SYSTEM_INFO;
```

Delphi Structure

```
uses calwin32

  NWFSE_FILE_SYSTEM_INFO = packed Record
    serverTimeAndVConsoleInfo : SERVER_AND_VCONSOLE_INFO;
    reserved : nuint16;
    padding  : nuint16;
    fileSystemInfo : FSE_FILE_SYSTEM_INFO;
  End;
```

Fields

serverTimeAndVConsoleInfo

Contains the time elapsed since the server was brought up. This time is returned in ticks (approximately 1/18 of a second). When this parameter reaches 0xFFFFFFFF, it wraps to zero.

reserved

Reserved for future use.

fileSystemInfo

Pointer to FSE_FILE_SYSTEM_INFO (page 196).

NWFSE_GARBAGE_COLLECTION_INFO

Returns information about failed requests. Used by NWGetGarbageCollectionInfo (page 79).

Service: Server Environment

Defined In: nwfse.h

Structure

```
typedef struct {
   SERVER_AND_VCONSOLE_INFO   serverTimeAndVConsoleInfo ;
   nuint16                    reserved ;
   nuint32                    failedAllocRequestCount ;
   nuint32                    numOfAllocs ;
   nuint32                    noMoreMemAvailableCount ;
   nuint32                    numOfGarbageCollections ;
   nuint32                    garbageFoundSomeMem ;
   nuint32                    garbageNumOfChecks ;
} NWFSE_GARBAGE_COLLECTION_INFO;
```

Delphi Structure

```
uses calwin32

  NWFSE_GARBAGE_COLLECTION_INFO = packed Record
    serverTimeAndVConsoleInfo : SERVER_AND_VCONSOLE_INFO;
    reserved : nuint16;
    padding  : nuint16;
    failedAllocRequestCount : nuint32;
    numOfAllocs : nuint32;
    noMoreMemAvailableCount : nuint32;
    numOfGarbageCollections : nuint32;
    garbageFoundSomeMem : nuint32;
    garbageNumOfChecks : nuint32;
  End;
```

Fields

serverTimeAndVConsoleInfo

Specifies the SERVER_AND_VCONSOLE_INFO structure containing the time since the server was brought up.

reserved

Is reserved (pass zero).

failedAllocRequestCount

Specifies the number of memory allocations that failed since the server was brought up.

numOfAllocs

Specifies the number of memory allocations made since the server was brought up.

noMoreMemAvailableCount

Specifies the number of times that allocation failed because there was no memory available since the server was brought up.

numOfGarbageCollections

Specifies the number of times garbage collection was invoked since the server was brought up.

garbageFoundSomeMem

Specifies the number of times garbage collection reclaimed memory since the server was brought up.

garbageNumOfChecks

Specifies the number of times garbage collection checked for memory since the server was brought up.

NWFSE_GENERAL_ROUTER_SAP_INFO

Returns router and SAP information. Used by NWGetGeneralRouterAndSAPInfo (page 81).

Service: Server Environment

Defined In: nwfse.h

Structure

```
typedef struct
{
    SERVER_AND_VCONSOLE_INFO    serverTimeAndVConsoleInfo
    nuint16                     reserved ;
    nuint32                     internalRIPSocket ;
    nuint32                     internalRouterDownFlag ;
    nuint32                     trackOnFlag ;
    nuint32                     externalRouterActiveFlag ;
    nuint32                     internalSAPSocketNumber ;
    nuint32                     replyToNearestServerFlag ;
} NWFSE_GENERAL_ROUTER_SAP_INFO;
```

Delphi Structure

```
uses calwin32

  NWFSE_GENERAL_ROUTER_SAP_INFO = packed Record
    serverTimeAndVConsoleInfo : SERVER_AND_VCONSOLE_INFO;
    reserved : nuint16;
    padding  : nuint16;
    internalRIPSocket : nuint32;
    internalRouterDownFlag : nuint32;
    trackOnFlag : nuint32;
    externalRouterActiveFlag : nuint32;
    internalSAPSocketNumber : nuint32;
    replyToNearestServerFlag : nuint32;
  End;
```

Fields

serverTimeAndVConsoleInfo

Specifies the SERVER_AND_VCONSOLE_INFO (page 306) structure containing the time since the server was brought up. This time is returned in ticks (approximately 1/8 of a second). When this parameter reaches 0xFFFFFFFF, it wraps to zero.

reserved

Reserved for future use.

internalRIPSocket

Specifies the router socket number.

internalRouterDownFlag

Specifies whether the internal router is up or down.

`trackOnFlag`

Specifies whether router tracking is active (the console operator issued the TRACK ON console command).

`externalRouterActiveFlag`

Specifies whether an external router is active.

`internalSAPSocketNumber`

Specifies the number of the socket that receives SAP packets.

`replyToNearestServerFlag`

Specifies whether the server will respond to GetNearestServer.

NWFSE_IPXSPX_INFO

Returns information about IPX/SPX use on a server. Used by NWGetIPXSPXInfo (page 83).

Service: Server Environment

Defined In: nwfse.h

Structure

```
typedef struct
{
    SERVER_AND_VCONSOLE_INFO    serverTimeAndVConsoleInfo ;
    nuint16                     reserved ;
    IPX_INFO                    IPXInfo ;
    SPX_INFO                    SPXInfo ;
} NWFSE_IPXSPX_INFO;
```

Delphi Structure

```
uses calwin32

  NWFSE_IPXSPX_INFO = packed Record
    serverTimeAndVConsoleInfo : SERVER_AND_VCONSOLE_INFO;
    reserved : nuint16;
    padding  : nuint16;
    IPXInfo : IPX_INFO;
    SPXInfo : SPX_INFO;
  End;
```

Fields

serverTimeAndVConsoleInfo

Specifies the SERVER_AND_VCONSOLE_INFO (page 306) structure containing the time since the server was brought up. This time is returned in ticks (approximately 1/8 of a second). When this parameter reaches 0xFFFFFFFF, it wraps to zero.

reserved

Reserved for future use.

IPXInfo

Contains a IPX_INFO (page 206) structure. This structure is defined in NWSERVST.H.

SPXInfo

Contains a SPX_INFO (page 308)structure. This structure is defined in NWSERVST.H.

NWFSE_KNOWN_NETWORKS_INFO

Returns information about known networks. Used by NWGetKnownNetworksInfo (page 85).

Service: Server Environment

Defined In: nwfse.h

Structure

```
typedef struct
{
   SERVER_AND_VCONSOLE_INFO    serverTimeAndVConsoleInfo;
   nuint16                     reserved ;
   nuint32                     numberOfEntries ;
   KNOWN_NET_INFO              knownNetInfo [51];
} NWFSE_KNOWN_NETWORKS_INFO;
```

Delphi Structure

```
uses calwin32

  NWFSE_KNOWN_NETWORKS_INFO = packed Record
    serverTimeAndVConsoleInfo : SERVER_AND_VCONSOLE_INFO;
    reserved : nuint16;
    padding  : nuint16;
    numberOfEntries : nuint32;
    knownNetInfo : Array[0..50] Of KNOWN_NET_INFO;
  End;
```

Fields

serverTimeAndVConsoleInfo

Specifies the SERVER_AND_VCONSOLE_INFO (page 306) structure containing the time since the server was brought up. This time is returned in ticks (approximately 1/8 of a second). When this parameter reaches 0xFFFFFFFF, it wraps to zero.

reserved

Reserved for future use.

numberOfEntries

Contains the number of entries for which information is returned.

knownNetInfo

Specifies the first KNOWN_NET_INFO (page 208) structure.

NWFSE_KNOWN_SERVER_INFO

Returns server information. Used by NWGetKnownServersInfo (page 87).

Service: Server Environment

Defined In: nwfse.h

Structure

```
typedef struct {
   SERVER_AND_VCONSOLE_INFO   serverTimeAndVConsoleIInfo;
   nuint16                    reserved ;
   nuint32                    numberOfEntries ;
   nuint8                     data [512];
} NWFSE_KNOWN_SERVER_INFO;
```

Delphi Structure

```
uses calwin32

  NWFSE_KNOWN_SERVER_INFO = packed Record
    serverTimeAndVConsoleInfo : SERVER_AND_VCONSOLE_INFO;
    reserved : nuint16;
    padding  : nuint16;
    numberOfEntries : nuint32;
    data : Array[0..511] Of nuint8;
  End;
```

Fields

serverTimeAndVConsoleInfo

Specifies the SERVER_AND_VCONSOLE_INFO (page 306) structure containing the time since the server was brought up. This time is returned in ticks (approximately 1/8 of a second). When this parameter reaches 0xFFFFFFFF, it wraps to zero.

reserved

Is reserved (pass 0).

numberOfEntries

Specifies the number of entries.

data

Specifies an array containing the following fields: SERVER_INFO=RECORD network Address: Array[0..3] of BYTE; nodeAddress: Array[0..5] of BYTE; socketAddress: nuint16; HopsToServer: nuint16; ServerName: Array[0..47] of char8; (#0 terminated) END;

The next field starts immediately after the trailing #0 of the last `ServerName` field.

NWFSE_LAN_COMMON_COUNTERS_INFO

Returns information on LAN common counters. Used by NWGetLANCommonCountersInfo (page 89).

Service: Server Environment

Defined In: nwfse.h

Structure

```
typedef struct {
    SERVER_AND_VCONSOLE_INFO   serverTimeAndVConsoleInfo ;
    nuint8                     statisticsMajorVersion ;
    nuint8                     statisticsMinorVersion ;
    nuint32                    numberOfGenericCounters ;
    nuint32                    numberOfCounterBlocks ;
    nuint32                    customVariableCount ;
    nuint32                    NextCounterBlock ;
    LAN_COMMON_INFO            LANCommonInfo ;
} NWFSE_LAN_COMMON_COUNTERS_INFO;
```

Delphi Structure

```
uses calwin32

 NWFSE_LAN_COMMON_COUNTERS_INFO = packed Record
    serverTimeAndVConsoleInfo : SERVER_AND_VCONSOLE_INFO;
    statisticsMajorVersion : nuint8;
    statisticsMinorVersion : nuint8;
    numberOfGenericCounters : nuint32;
    numberOfCounterBlocks : nuint32;
    customVariableCount : nuint32;
    NextCounterBlock : nuint32;
    LANCommonInfo : LAN_COMMON_INFO;
  End;
```

Fields

serverTimeAndVConsoleInfo

Specifies the SERVER_AND_VCONSOLE_INFO (page 306) structure containing the time since the server was brought up. This time is returned in ticks (approximately 1/8 of a second). When this parameter reaches 0xFFFFFFFF, it wraps to zero.

statisticsMajorVersion

Specifies the major version number of the statistics table.

statisticsMinorVersion

Specifies the minor version number of the statistics table.

numberOfGenericCounters

Specifies the total number of LAN common counters.

numberOfCounterBlocks

Specifies the number of blocks used by LAN common counters by the LAN board.

customVariableCount

Specifies the number of custom counters for this LAN board.

NextCounterBlock

Specifies the value to be passed in block numbers to the NWGetLANCommonCountersInfo function.

LANCommonInfo

Points to the LAN_COMMON_INFO structure containing information about the LAN board.

Remarks

When 0 is returned in the `NextCounterBlock` field, all common counters have been returned.

NWFSE_LAN_CONFIG_INFO

Returns LAN configuration information. Used by NWGetLANConfigInfo (page 91).

Service: Server Environment

Defined In: nwfse.h

Structure

```
typedef struct
{
   SERVER_AND_VCONSOLE_INFO   serverTimeAndVConsoleInfo ;
   nuint16                    reserved ;
   LAN_CONFIG_INFO            LANConfigInfo ;
} NWFSE_LAN_CONFIG_INFO;
```

Delphi Structure

```
uses calwin32

  NWFSE_LAN_CONFIG_INFO = packed Record
    serverTimeAndVConsoleInfo : SERVER_AND_VCONSOLE_INFO;
    reserved : nuint16;
    padding  : nuint16;
    LANConfigInfo : LAN_CONFIG_INFO;
  End;
```

Fields

serverTimeAndVConsoleInfo

Specifies the SERVER_AND_VCONSOLE_INFO (page 306) structure containing the time since the server was brought up. This time is returned in ticks (approximately 1/8 of a second). When this parameter reaches 0xFFFFFFFF, it wraps to zero.

reserved

Is reserved (pass 0).

LANConfigInfo

Contains LAN configuration information.

NWFSE_LAN_CUSTOM_INFO

Returns information on LAN custom counters. Used by NWGetLANCustomCountersInfo (page 93).

Service: Server Environment

Defined In: nwfse.h

Structure

```
typedef struct
{
   SERVER_AND_VCONSOLE_INFO    serverTimeAndVConsoleInfo ;
   nuint16                     reserved ;
   nuint32                     numCustomVar ;
   nuint8                      customInfo [512];
} NWFSE_LAN_CUSTOM_INFO;
```

Delphi Structure

```
uses calwin32

  NWFSE_LAN_CUSTOM_INFO = packed Record
    serverTimeAndVConsoleInfo : SERVER_AND_VCONSOLE_INFO;
    reserved : nuint16;
    padding  : nuint16;
    numCustomVar : nuint32;
    customInfo : Array[0..511] Of nuint8;
  End;
```

Fields

serverTimeAndVConsoleInfo

Specifies the SERVER_AND_VCONSOLE_INFO (page 306) structure containing the time since the server was brought up. This time is returned in ticks (approximately 1/8 of a second). When this parameter reaches 0xFFFFFFFF, it wraps to zero.

reserved

Is reserved (pass 0).

numCustomVar

Specifies the value of the custom counter.

customInfo

Specifies the description of the custom counter.

NWFSE_LOADED_MEDIA_NUM_LIST

Returns a list of loaded media numbers. Used by NWGetLoadedMediaNumList (page 95).

Service: Server Environment

Defined In: nwfse.h

Structure

```
typedef struct
{
   SERVER_AND_VCONSOLE_INFO    serverTimeAndVConsoleInfo ;
   nuint16                     reserved ;
   nuint32                     maxMediaTypes ;
   nuint32                     mediaListCount ;
   nuint32                     mediaList [FSE_MEDIA_LIST_MAX];
} NWFSE_LOADED_MEDIA_NUM_LIST;
```

Delphi Structure

```
uses calwin32

  NWFSE_LOADED_MEDIA_NUM_LIST = packed Record
    serverTimeAndVConsoleInfo : SERVER_AND_VCONSOLE_INFO;
    reserved : nuint16;
    padding  : nuint16;
    maxMediaTypes : nuint32;
    mediaListCount : nuint32;
    mediaList : Array[0.. FSE_MEDIA_LIST_MAX -1] Of nuint32;
  End;
```

Fields

serverTimeAndVConsoleInfo

Specifies the SERVER_AND_VCONSOLE_INFO (page 306) structure containing the time since the server was brought up. This time is returned in ticks (approximately 1/8 of a second). When this parameter reaches 0xFFFFFFFF, it wraps to zero.

reserved

Is reserved (pass 0).

maxMediaTypes

Specifies the maximum number of media allowed.

mediaListCount

Specifies the number of valid IDs returned in the mediaList parameter.

mediaList

Specifies the ID numbers of the returned media.

NWFSE_LOCK_INFO

Returns Server Environment locking information. Used by NWGetServerConnInfo (page 143).

Service: Server Environment

Defined In: nwfse.h

Structure

```
typedef struct
{
   nuint8    logicalLockThreshold;
   nuint8    recordLockThreshold;
   nuint16   fileLockCount;
   nuint16   recordLockCount;
} NWFSE_LOCK_INFO;
```

Delphi Syntax

```
uses calwin32

  NWFSE_LOCK_INFO = packed RECORD
    logicalLockThreshold : nuint8;
    recordLockThreshold  : nuint8;
    fileLockCount        : nuint16;
    recordLockCount      : nuint16;
  End;
```

Fields

logicalLockThreshold

>   Specifies the maximum number of logical locks a user can have.

recordLockThreshold

>   Specifies the maximum number of record locks the user can have.

fileLockCount

>   Specifies the number of files the user locked.

recordLockCount

>   Specifies the number of records the user locked.

NWFSE_LOGIN_NAME

Returns the login name of the object. Used by NWGetServerConnInfo (page 143).

Service: Server Environment

Defined In: nwfse.h

Structure

```
typedef struct
{
   nuint32   loginObjectType;
   nuint8    loginNameLen;
   pnuint8   loginName;
} NWFSE_LOGIN_NAME;
```

Delphi Syntax

```
uses calwin32

  NWFSE_LOGIN_NAME  = packed RECORD
     loginObjectType : nuint32;
     loginNameLen : nuint8;
     loginName : pnuint8;
  End;
```

Fields

loginObjectType

  Specifies the type of the logged in object (user, group, server, etc.).

loginNameLen

  Specifies the length of the login name string.

loginName

  Points to the string containing the name of the logged in object.

NWFSE_LOGIN_TIME

Returns the login time of the object. Used by NWGetServerConnInfo (page 143).

Service: Server Environment

Defined In: nwfse.h

Structure

```
typedef struct
{
   nuint8    loginTime[7];
   nuint32   loginExpirationTime;
} NWFSE_LOGIN_TIME;
```

Delphi Syntax

```
uses calwin32

  NWFSE_LOGIN_TIME  = packed RECORD
     loginTime : Array[1..7] of nuint8;
     loginExpirationTime : nuint32;
  End;
```

Fields

loginTime

Specifies the time the user logged in.

loginExpirationTime

Specifies the expiration time of the login.

NWFSE_LSL_INFO

Returns LSL information. Used by NWGetLSLInfo (page 97).

Service: Server Environment

Defined In: nwfse.h

Structure

```
typedef struct
{
   SERVER_AND_VCONSOLE_INFO   serverTimeAndVConsoleInfo ;
   nuint16                    reserved ;
   LSL_INFO                   LSLInfo ;
} NWFSE_LSL_INFO;
```

Delphi Structure

```
uses calwin32

  NWFSE_LSL_INFO = packed Record
    serverTimeAndVConsoleInfo : SERVER_AND_VCONSOLE_INFO;
    reserved : nuint16;
    padding : nuint16;
    LSLInfo : LSL_INFO;
  End;
```

Fields

serverTimeAndVConsoleInfo

Specifies the SERVER_AND_VCONSOLE_INFO (page 306) structure containing the time since the server was brought up. This time is returned in ticks (approximately 1/8 of a second). When this parameter reaches 0xFFFFFFFF, it wraps to zero.

reserved

Is reserved (pass 0).

LSLInfo

Points to the LSL_INFO structure containing the LSL information.

NWFSE_LSL_LOGICAL_BOARD_STATS

Returns statistics concerning LSL boards. Used by NWGetLSLLogicalBoardStats (page 99).

Service: Server Environment

Defined In: nwfse.h

Structure

```
typedef struct {
   SERVER_AND_VCONSOLE_INFO   serverTimeAndVConsoleInfo ;
   nuint16                    reserved0 ;
   nuint32                    LogTtlTxPackets ;
   nuint32                    LogTtlRxPackets ;
   nuint32                    LogUnclaimedPackets ;
   nuint32                    reserved1 ;
} NWFSE_LSL_LOGICAL_BOARD_STATS;
```

Delphi Structure

```
uses calwin32

  NWFSE_LSL_LOGICAL_BOARD_STATS = packed Record
    serverTimeAndVConsoleInfo : SERVER_AND_VCONSOLE_INFO;
    reserved0 : nuint16;
    padding  : nuint16;
    LogTtlTxPackets : nuint32;
    LogTtlRxPackets : nuint32;
    LogUnclaimedPackets : nuint32;
    reserved1 : nuint32;
  End;
```

Fields

serverTimeAndVConsoleInfo

Specifies the SERVER_AND_VCONSOLE_INFO (page 306) structure containing the time since the server was brought up. This time is returned in ticks (approximately 1/8 of a second). When this parameter reaches 0xFFFFFFFF, it wraps to zero.

reserved0

Is reserved (pass zero).

LogTtlTxPackets

Specifies the total number of packets transmitted.

LogTtlRxPackets

Specifies the total number of packets received.

LogUnclaimedPackets

Specifies the total number of unclaimed packets.

reserved1

Is reserved (pass zero).

NWFSE_MEDIA_MGR_OBJ_INFO

Returns information about media manager objects. Used by NWGetMediaMgrObjInfo (page 103).

Service: Server Environment

Defined In: nwfse.h

Structure

```
typedef struct
{
   SERVER_AND_VCONSOLE_INFO    serverTimeAndVConsoleInfo ;
   nuint16                     reserved ;
   FSE_MM_OBJ_INFO             fseMMObjInfo ;
} NWFSE_MEDIA_MGR_OBJ_INFO;
```

Delphi Structure

```
uses calwin32

 NWFSE_MEDIA_MGR_OBJ_INFO = packed Record
    serverTimeAndVConsoleInfo : SERVER_AND_VCONSOLE_INFO;
    reserved : nuint16;
    padding  : nuint16;
    fseMMObjInfo : FSE_MM_OBJ_INFO;
  End;
```

Fields

serverTimeAndVconsoleInfo

Specifies the SERVER_AND_VCONSOLE_INFO (page 306) structure containing the time since the server was brought up. This time is returned in ticks (approximately 1/8 of a second). When this parameter reaches 0xFFFFFFFF, it wraps to zero.

reserved

Is reserved for future use.

fseMMObjInfo

Pointer to FSE_MM_OBJ_INFO (page 198).

NWFSE_MEDIA_MGR_OBJ_LIST

Returns the media manager object list and the media manager object children's list. Used by NWGetMediaMgrObjList (page 105).

Service: Server Environment

Defined In: nwfse.h

Structure

```
typedef struct
{
   SERVER_AND_VCONSOLE_INFO    serverTimeAndVConsoleInfo ;
   nuint16                     reserved ;
   nuint32                     nextStartObjNum ;
   nuint32                     objCount ;
   nuint32                     objs [FSE_MAX_OBJECTS];
} NWFSE_MEDIA_MGR_OBJ_LIST;
```

Delphi Structure

```
uses calwin32

  NWFSE_MEDIA_MGR_OBJ_LIST = packed Record
    serverTimeAndVConsoleInfo : SERVER_AND_VCONSOLE_INFO;
    reserved : nuint16;
    padding  : nuint16;
    nextStartObjNum : nuint32;
    objCount : nuint32;
    objs : Array[0.. FSE_MAX_OBJECTS -1] Of nuint32;
  End;
```

Fields

serverTimeAndVConsoleInfo

Specifies the SERVER_AND_VCONSOLE_INFO (page 306) structure containing the time since the server was brought up. This time is returned in ticks (approximately 1/8 of a second). When this parameter reaches 0xFFFFFFFF, it wraps to zero.

reserved

Is reserved for future use.

nextStartObjNum

Contains the number to be passed as the startNumber parameter on the next call. When this field is -1, all information has been processed.

objCount

Specifies the number of object IDs returned.

objs

Specifies the list of object IDs.

NWFSE_MEDIA_NAME_LIST

Returns the media name by using a media number. Used by NWGetMediaNameByMediaNum (page 108).

Service: Server Environment

Defined In: nwfse.h

Structure

```
typedef struct
{
    SERVER_AND_VCONSOLE_INFO    serverTimeAndVConsoleInfo ;
    nuint16                     reserved ;
} NWFSE_MEDIA_NAME_LIST;
```

Delphi Structure

```
uses calwin32

 NWFSE_MEDIA_NAME_LIST = packed Record
    serverTimeAndVConsoleInfo : SERVER_AND_VCONSOLE_INFO;
    reserved : nuint16;
    padding  : nuint16;
  End;
```

Fields

serverTimeAndVConsoleInfo

Specifies the SERVER_AND_VCONSOLE_INFO (page 306) structure containing the time since the server was brought up. This time is returned in ticks (approximately 1/8 of a second). When this parameter reaches 0xFFFFFFFF, it wraps to zero.

reserved

Is reserved for future use.

NWFSE_MLID_BOARD_INFO

Contains a list of each Multiple Link Interface Driver (MLID) on a specified server. Used by NWGetMLIDBoardInfo (page 110).

Service: Server Environment

Defined In: nwfse.h

Syntax

```
typedef struct {
   SERVER_AND_VCONSOLE_INFO   serverTimeAndVConsoleInfo;
   nuint8                     reserved;
   nuint8                     numberProtocols;
   MLID_BOARD_INFO            MLIDBoardInfo[FSE_MAX_NUM_BOARD_INFO];
} NWFSE_MLID_BOARD_INFO;
```

Delphi Syntax

```
CONST FSE_MAX_NUM_BOARD_INFO = 18;

uses calwin32

  NWFSE_MLID_BOARD_INFO = packed Record
     serverTimeAndVConsoleInfo :SERVER_AND_VCONSOLE_INFO;
     reserved : nuint8;
     numberProtocols :nuint8;
     LIDBoardInfo : Array[0..(FSE_MAX_NUM_BOARD_INFO-1)] of
                    MLID_BOARD_INFO;
  End;
```

Fields

serverTimeAndVConsoleInfo

Specifies the SERVER_AND_VCONSOLE_INFO (page 306) structure containing the time since the server was brought up. This time is returned in ticks (approximately 1/8 of a second). When this parameter reaches 0xFFFFFFFF, it wraps to zero.

reserved

Is reserved for future use.

numberProtocols

Specifies the number of protocols bound to the specified board.

MLIDBoardInfo

Points to MLID_BOARD_INFO, which contains information about each MLID.

NWFSE_NETWORK_ADDRESS

Returns the network address information. Used by NWGetServerConnInfo (page 143).

Service: Server Environment

Defined In: nwfse.h

Structure

```
typedef struct
{
   nuint32   addressType;
   nuint32   addressSize;
   pnuint8   address;
} NWFSE_NETWORK_ADDRESS;
```

Delphi Syntax

```
Type
   NWFSE_NETWORK_ADDRESS = packed Record
      addressType : nuint32;
      addressSize : nuint32;
      address : pnuint8;
   End;
```

Fields

addressType

> Specifies the type of the network transport address:
>
> 1 IPX
> 2 IP
> 8 UDP
> 9 TCP

addressSize

> Specifies the size (in bytes) of the buffer allocated for the address and the actual size of the returned address.

address

> Specifies the physical address in binary form.

Remarks

If the address is an IP address, four bytes of the address are in printable order.

TIP: The declaration of address types 1 and 2 is different from the standard declaration (found at Network Address Types).

NWFSE_NETWORK_ROUTER_INFO

Returns information about a specified router on the network. Used by NWGetNetworkRouterInfo (page 116).

Service: Server Environment

Defined In: nwfse.h

Structure

```
typedef struct {
   SERVER_AND_VCONSOLE_INFO   serverTimeAndVConsoleInfo ;
   nuint16                    reserved ;
   nuint32                    NetIDNumber ;
   nuint16                    HopsToNet ;
   nuint16                    NetStatus ;
   nuint16                    TimeToNet ;
} NWFSE_NETWORK_ROUTER_INFO;
```

Delphi Structure

```
uses calwin32

  NWFSE_NETWORK_ROUTER_INFO = packed Record
    serverTimeAndVConsoleInfo : SERVER_AND_VCONSOLE_INFO;
    reserved : nuint16;
    padding  : nuint16;
    NetIDNumber : nuint32;
    HopsToNet : nuint16;
    NetStatus : nuint16;
    TimeToNet : nuint16;
  End;
```

Fields

serverTimeAndVConsoleInfo

Specifies the SERVER_AND_VCONSOLE_INFO (page 306) structure containing the time since the server was brought up. This time is returned in ticks (approximately 1/8 of a second). When this parameter reaches 0xFFFFFFFF, it wraps to zero.

reserved

Is reserved (pass zero).

NetIDNumber

Specifies the network ID number used by the server.

HopsToNet

Specifies the number of routers to cross to get to the network.

NetStatus

Specifies the status of the network.

TimeToNet

Specifies the number of clock ticks to the network (roundtrip).

Remarks

The `NetStatus` field can have the following values:

0x01 LOCALBIT
0x02 NETSTARTBIT
0x04 NETRELIABLEBIT
0x10 NETWANBIT

NWFSE_NETWORK_ROUTERS_INFO

Returns information about the routers on a network. Used by NWGetNetworkRoutersInfo (page 118).

Service: Server Environment

Defined In: nwfse.h

Structure

```
typedef struct
{
   SERVER_AND_VCONSOLE_INFO    serverTimeAndVConsoleInfo ;
   nuint16                     reserved ;
   nuint32                     NumberOfEntries ;
   ROUTERS_INFO                routersInfo [36];
} NWFSE_NETWORK_ROUTERS_INFO;
```

Delphi Structure

```
uses calwin32

 NWFSE_NETWORK_ROUTERS_INFO = packed Record
    serverTimeAndVConsoleInfo : SERVER_AND_VCONSOLE_INFO;
    reserved : nuint16;
    padding  : nuint16;
    NumberOfEntries : nuint32;
    routersInfo : Array[0..35] Of ROUTERS_INFO;
  End;
```

Fields

serverTimeAndVConsoleInfo

Specifies the SERVER_AND_VCONSOLE_INFO (page 306) structure containing the time since the server was brought up. This time is returned in ticks (approximately 1/8 of a second). When this parameter reaches 0xFFFFFFFF, it wraps to zero.

reserved

Is reserved for future use.

NumberOfEntries

Contains the number of ROUTERS_INFO (page 305) structures in the buffer.

routersInfo

Contains the number of ROUTERS_INFO (page 305) structures in the buffer.

NWFSE_NLM_INFO

Returns information about an NLM running on a server for the current connection. Used by NWGetNLMInfo (page 122).

Service: Server Environment

Defined In: nwfse.h

Structure

```
typedef struct
{
   SERVER_AND_VCONSOLE_INFO   serverTimeAndVConsoleInfo ;
   nuint16                    reserved ;
   NLM_INFO                   NLMInfo ;
} NWFSE_NLM_INFO;
```

Delphi Structure

```
uses calwin32

 NWFSE_NLM_INFO = packed Record
    serverTimeAndVConsoleInfo : SERVER_AND_VCONSOLE_INFO;
    reserved : nuint16;
    padding  : nuint16;
    NLMInfo : NLM_INFO;
  End;
```

Fields

serverTimeAndVConsoleInfo

Specifies the SERVER_AND_VCONSOLE_INFO (page 306) structure containing the time since the server was brought up. This time is returned in ticks (approximately 1/8 of a second). When this parameter reaches 0xFFFFFFFF, it wraps to zero.

reserved

Is reserved for future use.

NLMInfo

Contains an NLM_INFO (page 223) structure.

NWFSE_NLM_LOADED_LIST

Returns a list of NLMs running on a server. Used by NWGetNLMLoadedList (page 124).

Service: Server Environment

Defined In: nwfse.h

Structure

```
typedef struct
{
   SERVER_AND_VCONSOLE_INFO   serverTimeAndVConsoleInfo ;
   nuint16                    reserved ;
   nuint32                    numberNLMsLoaded ;
   nuint32                    NLMsInList ;
   nuint32                    NLMNums [FSE_NLM_NUMS_RETURNED_MAX];
} NWFSE_NLM_LOADED_LIST;
```

Delphi Structure

```
uses calwin32

NWFSE_NLM_LOADED_LIST = packed Record
  serverTimeAndVConsoleInfo : SERVER_AND_VCONSOLE_INFO;
  reserved : nuint16;
  padding  : nuint16;
  numberNLMsLoaded : nuint32;
  NLMsInList : nuint32;
  NLMNums : Array[0..FSE_NLM_NUMS_RETURNED_MAX-1] Of nuint32;
End;
```

Fields

serverTimeAndVConsoleInfo

Specifies the SERVER_AND_VCONSOLE_INFO (page 306) structure containing the time since the server was brought up. This time is returned in ticks (approximately 1/8 of a second). When this parameter reaches 0xFFFFFFFF, it wraps to zero.

reserved

Is reserved for future use.

numberNLMsLoaded

Specifies the total number of NLMs loaded on the server including hidden NLMs. No information will be returned about hidden NLMs.

NLMsInList

Specifies the number of valid NLM IDs returned in `NLMNums`. A valid NLM is an NLM whose information was placed in the buffer and does not include hidden NLMs.

NLMNums

A list containing the numbers assigned to NLMs loaded on the server.

NWFSE_NLMS_RESOURCE_TAG_LIST

Returns the NLM's resource tag list. Used by NWGetNLMsResourceTagList (page 126).

Service: Server Environment

Defined In: nwfse.h

Structure

```
typedef struct
{
    SERVER_AND_VCONSOLE_INFO   serverTimeAndVConsoleInfo ;
    nuint16                    reserved ;
    nuint32                    totalNumOfResourceTags ;
    nuint32                    packetResourceTags ;
    nuint8                     resourceTagBuf [512];
} NWFSE_NLMS_RESOURCE_TAG_LIST;
```

Delphi Structure

```
uses calwin32

  NWFSE_NLMS_RESOURCE_TAG_LIST = packed Record
    serverTimeAndVConsoleInfo : SERVER_AND_VCONSOLE_INFO;
    reserved : nuint16;
    padding  : nuint16;
    totalNumOfResourceTags : nuint32;
    packetResourceTags : nuint32;
    resourceTagBuf : Array[0..511] Of nuint8;
  End;
```

Fields

serverTimeAndVConsoleInfo

Specifies the SERVER_AND_VCONSOLE_INFO (page 306) structure containing the time since the server was brought up. This time is returned in ticks (approximately 1/8 of a second). When this parameter reaches 0xFFFFFFFF, it wraps to zero.

reserved

Is reserved for future use.

totalNumOfResourceTags

Specifies the total number of resource tags the NLM is using.

packetResourceTags

Specifies the number of resource tags the structure contains.

resourceTagBuf

Contains the resourceTagBuf (page 304) structure.

NWFSE_OS_VERSION_INFO

Returns operating system version information. Used by NWGetOSVersionInfo (page 128).

Service: Server Environment

Defined In: nwfse.h

Structure

```
typedef struct
{
    SERVER_AND_VCONSOLE_INFO    serverTimeAndVConsoleInfo ;
    nuint16                     reserved ;
    nuint8                      OSMajorVersion ;
    nuint8                      OSMinorVersion ;
    nuint8                      OSRevisionNum ;
    nuint8                      accountingVersion ;
    nuint8                      VAPVersion ;
    nuint8                      queueingVersion ;
    nuint8                      securityRestrictionsLevel ;
    nuint8                      bridgingSupport ;
    nuint32                     maxNumOfVolumes ;
    nuint32                     numOfConnSlots ;
    nuint32                     maxLoggedInConns ;
    nuint32                     maxNumOfNameSpaces ;
    nuint32                     maxNumOfLans ;
    nuint32                     maxNumOfMediaTypes ;
    nuint32                     maxNumOfProtocols ;
    nuint32                     maxMaxSubdirTreeDepth ;
    nuint32                     maxNumOfDataStreams ;
    nuint32                     maxNumOfSpoolPrinters ;
    nuint32                     serialNum ;
    nuint16                     applicationNum ;
} NWFSE_OS_VERSION_INFO;
```

Delphi Structure

```
uses calwin32

  NWFSE_OS_VERSION_INFO = packed Record
    serverTimeAndVConsoleInfo : SERVER_AND_VCONSOLE_INFO;
    reserved : nuint16;
    padding  : nuint16;
    OSMajorVersion : nuint8;
    OSMinorVersion : nuint8;
    OSRevisionNum : nuint8;
    accountingVersion : nuint8;
    VAPVersion : nuint8;
    queueingVersion : nuint8;
    securityRestrictionsLevel : nuint8;
    bridgingSupport : nuint8;
    maxNumOfVolumes : nuint32;
```

```
      numOfConnSlots : nuint32;
      maxLoggedInConns : nuint32;
      maxNumOfNameSpaces : nuint32;
      maxNumOfLans : nuint32;
      maxNumOfMediaTypes : nuint32;
      maxNumOfProtocols : nuint32;
      maxMaxSubdirTreeDepth : nuint32;
      maxNumOfDataStreams : nuint32;
      maxNumOfSpoolPrinters : nuint32;
      serialNum : nuint32;
      applicationNum : nuint16;
   End;
```

Fields

serverTimeAndVConsoleInfo

Specifies the SERVER_AND_VCONSOLE_INFO (page 306) structure containing the time since the server was brought up. This time is returned in ticks (approximately 1/18 of a second). When this parameter reaches 0xFFFFFFFF, it wraps to zero.

reserved

Reserved.

OSMajorVersion

Specifies the major version number of the OS.

OSMinorVersion

Specifies the minor version number of the OS.

OSRevisionNum

Specifies the version revision letter of the OS.

accountingVersion

Specifies the version of the accounting subsystem.

VAPVersion

Is not used.

queueingVersion

Specifies the queueing version number.

securityRestrictionsLevel

Specifies the security restriction version number.

bridgingSupport

Specifies the internet bridge support version number.

maxNumOfVolumes

Contains the maximum number of volumes that can be simultaneously mounted on the server.

numOfConnSlots

Specifies the maximum number of connections that can be used simultaneously on the server.

maxLoggedInConns

Contains the maximum number of connections that can be used simultaneously on the server.

maxNumOfNameSpaces

Specifies the maximum number of name spaces that can be simultaneously loaded on the server.

maxNumOfLans

Specifies the maximum number of LAN boards that can be used on the server.

maxNumOfMediaTypes

Specifies the maximum number of different media types allowed on the server.

maxNumOfProtocols

Specifies the maximum number of protocol stacks that can be used on the server.

maxMaxSubdirTreeDepth

Specifies the maximum depth of directories that can be used on the server.

maxNumOfDataStreams

Specifies the maximum number of data streams that can be used on the server.

maxNumOfSpoolPrinters

Specifies the maximum number of spool printers (default queue assignments) that can be used on the server.

serialNum

Specifies the serial number of the server.

applicationNum

Is included for backward compatibility.

NWFSE_PACKET_BURST_INFO

Returns packet burst information. Used by NWGetPacketBurstInfo (page 130).

Service: Server Environment

Defined In: nwfse.h

Structure

```
typedef struct {
   SERVER_AND_VCONSOLE_INFO    serverTimeAndVConsoleInfo ;
   nuint16                     reserved ;
   PACKET_BURST_INFO           packetBurstInfo ;
} NWFSE_PACKET_BURST_INFO;
```

Delphi Structure

```
uses calwin32

  NWFSE_PACKET_BURST_INFO = packed Record
    serverTimeAndVConsoleInfo : SERVER_AND_VCONSOLE_INFO;
    reserved : nuint16;
    padding  : nuint16;
    packetBurstInfo : PACKET_BURST_INFO;
  End;
```

Fields

serverTimeAndVConsoleInfo

Specifies the SERVER_AND_VCONSOLE_INFO (page 306) structure containing the time since the server was brought up. This time is returned in ticks (approximately 1/8 of a second). When this parameter reaches 0xFFFFFFFF, it wraps to zero.

reserved

Is reserved (pass zero).

packetBurstInfo

Specifies the PACKET_BURST_INFO structure containing information about packet bursts.

NWFSE_PRINT_INFO

Returns Server Environment printing information. Used by NWGetServerConnInfo (page 143).

Service: Server Environment

Defined In: nwfse.h

Structure

```
typedef struct
{
   nuint8   printFlags;
   nuint8   tabSize
   nuint8   numberCopies;
   nuint8   printToFileFlag;
   nuint8   bannerFileName[14];
   nuint8   targetServerID;
   nuint8   formType;
} NWFSE_PRINT_INFO;
```

Delphi Syntax

```
uses calwin32

  NWFSE_PRINT_INFO = packed RECORD
     printFlags : nuint8;
     tabSize : nuint8;
     numberCopies : nuint8;
     printToFileFlag : nuint8;
     bannerFileName : Array[1..14] of nuint8;
     targetServerID : nuint8;
     formType : nuint8;
  End;
```

Fields

printFlags

Specifies the print flags:

Value	Constant and Description
0x08	SFormSuppressBit specifies the print service suppresses automatic form feed after the print job is printed.
0x10	SCreateBit
0x20	SDeleteBit
0x40	STabBit
0x80	sBannerPageBit specifies the print service precedes the print job with a banner page.

`tabSize`

Specifies the tab size which is a value between 1 and 18 inclusive (default setting is 0x08).

`numberCopies`

Specifies the number of copies (0 to 255) of the captured file that is printed (default setting is 0x0001). If 0x0000, nothing prints.

`printToFileFlag`

Specifies that the data is sent to a file rather than a printer.

`bannerFileName`

Specifies the name of the banner that is printed when a print job is submitted.

`targetServerID`

Specifies the server ID of the queue server servicing the job. If this field is set to 0xFFFFFFFF, any queue server can service the job. If the specified queue server is not attached to the queue, QMS removes the job from the queue.

`formType`

Specifies the type of form (0 to 255) a user must mount in the printer to print files captured to the LPT device. If the form currently mounted in the printer differs from the form type returned in this field, the NetWare server console displays a message instructing the console operator to mount the correct form. The default form is 0x0000.

Remarks

The banner specified in `bannerFileName` will be printed only if the user has selected the option to print a banner. If a banner is not specified in `bannerFileName`, a default banner will print that contains the name of the file being printed.

NWFSE_PROTOCOL_CUSTOM_INFO

Returns custom information about protocol stacks. Used by NWGetProtocolStackCustomInfo (page 135).

Service: Server Environment

Defined In: nwfse.h

Structure

```
typedef struct
{
   SERVER_AND_VCONSOLE_INFO   serverTimeAndVConsoleInfo ;
   nuint16                    reserved0 ;
   nuint32                    customCount ;
   nuint8                     customStruct [512];
} NWFSE_PROTOCOL_CUSTOM_INFO;
```

Delphi Structure

```
uses calwin32

  NWFSE_PROTOCOL_CUSTOM_INFO = packed Record
    serverTimeAndVConsoleInfo : SERVER_AND_VCONSOLE_INFO;
    reserved0 : nuint16;
    padding  : nuint16;
    customCount : nuint32;
    customStruct : Array[0.. 512 -1] Of nuint8;
  End;
```

Fields

serverTimeAndVConsoleInfo

Specifies the SERVER_AND_VCONSOLE_INFO (page 306) structure containing the time since the server was brought up. This time is returned in ticks (approximately 1/8 of a second). When this parameter reaches 0xFFFFFFFF, it wraps to zero.

reserved

Is reserved for future use.

customCount

Contains the number of NWFSE_PROTOCOL_CUSTOM_INFO (page 278) structures in the buffer.

customStruct

Specifies the structure with the DWORD value of the custom counter, followed by a length preceded string describing the custom counter.

NWFSE_PROTOCOL_ID_NUMS

Returns the protocol stack numbers using a media number or using a LAN board number. Used by NWGetProtocolStkNumsByMediaNum (page 141).

Service: Server Environment

Defined In: nwfse.h

Structure

```
typedef struct
{
   SERVER_AND_VCONSOLE_INFO   serverTimeAndVConsoleInfo ;
   nuint16                    reserved ;
   nuint32                    stackIDCount ;
   nuint32                    stackIDs [FSE_STACK_IDS_MAX];
} NWFSE_PROTOCOL_ID_NUMS;
```

Delphi Structure

```
uses calwin32

  NWFSE_PROTOCOL_ID_NUMS = packed Record
    serverTimeAndVConsoleInfo : SERVER_AND_VCONSOLE_INFO;
    reserved : nuint16;
    padding  : nuint16;
    stackIDCount : nuint32;
    stackIDs : Array[0.. FSE_STACK_IDS_MAX -1] Of nuint32;
  End;
```

Fields

serverTimeAndVConsoleInfo

Specifies the SERVER_AND_VCONSOLE_INFO (page 306) structure containing the time since the server was brought up. This time is returned in ticks (approximately 1/8 of a second). When this parameter reaches 0xFFFFFFFF, it wraps to zero.

reserved

Is reserved for future use.

stackIDCount

Specifies the number of protocol stack ID Number returned in stackIDs by NWGetProtocolStkNumsByMediaNum (page 141).

stackIDs

Specifies the list of stack ID numbers.

NWFSE_PROTOCOL_STK_CONFIG_INFO

Returns information about the protocol stack configuration. Used by
NWGetProtocolStackConfigInfo (page 133).

Service: Server Environment

Defined In: nwfse.h

Structure

```
typedef struct
{
    SERVER_AND_VCONSOLE_INFO    serverTimeAndVConsoleInfo ;
    nuint16                     reserved ;
    nuint8                      configMajorVersionNum ;
    nuint8                      configMinorVersionNum ;
    nuint8                      stackMajorVersionNum ;
    nuint8                      stackMinorVersionNum ;
    nuint8                      stackShortName [16];
} NWFSE_PROTOCOL_STK_CONFIG_INFO;
```

Delphi Structure

```
uses calwin32

  NWFSE_PROTOCOL_STK_CONFIG_INFO = packed Record
    serverTimeAndVConsoleInfo : SERVER_AND_VCONSOLE_INFO;
    reserved : nuint16;
    padding  : nuint16;
    configMajorVersionNum : nuint8;
    configMinorVersionNum : nuint8;
    stackMajorVersionNum : nuint8;
    stackMinorVersionNum : nuint8;
    stackShortName : Array[0..15] Of nuint8;
  End;
```

Fields

serverTimeAndVConsoleInfo

Specifies the SERVER_AND_VCONSOLE_INFO (page 306) structure containing the time
since the server was brought up. This time is returned in ticks (approximately 1/8 of a second).
When this parameter reaches 0xFFFFFFFF, it wraps to zero.

reserved

Is reserved for future use.

configMajorVersionNum

Specifies the major version number of the configuration table.

configMinorVersionNum

Specifies the minor version number of the configuration table.

`stackMajorVersionNum`

Specifies the major version number of the protocol stack.

`stackMinorVersionNum`

Specifies the minor version number of the protocol stack.

`stackShortName`

Specifies the short protocol name; name used to register the stack with the LSL. The first byte is the length of the string followed by the string itself. It is not a null-terminated string.

NWFSE_PROTOCOL_STK_STATS_INFO

Returns information about protocol stack statistics. Used by NWGetProtocolStackStatsInfo (page 137).

Service: Server Environment

Defined In: nwfse.h

Structure

```
typedef struct
{
   SERVER_AND_VCONSOLE_INFO   serverTimeAndVConsoleInfo ;
   nuint16                    reserved ;
   nuint8                     statMajorVersionNum ;
   nuint8                     statMinorVersionNum ;
   nuint16                    commonCounters ;
   nuint32                    validCountersMask ;
   nuint32                    totalTxPackets ;
   nuint32                    totalRxPackets ;
   nuint32                    ignoredRxPackets ;
   nuint16                    numCustomCounters ;
} NWFSE_PROTOCOL_STK_STATS_INFO;
```

Delphi Structure

```
uses calwin32

  NWFSE_PROTOCOL_STK_STATS_INFO = packed Record
    serverTimeAndVConsoleInfo : SERVER_AND_VCONSOLE_INFO;
    reserved : nuint16;
    padding  : nuint16;
    statMajorVersionNum : nuint8;
    statMinorVersionNum : nuint8;
    commonCounters : nuint16;
    validCountersMask : nuint32;
    totalTxPackets : nuint32;
    totalRxPackets : nuint32;
    ignoredRxPackets : nuint32;
    numCustomCounters : nuint16;
  End;
```

Fields

serverTimeAndVConsoleInfo

Specifies the SERVER_AND_VCONSOLE_INFO (page 306) structure containing the time since the server was brought up. This time is returned in ticks (approximately 1/8 of a second). When this parameter reaches 0xFFFFFFFF, it wraps to zero.

reserved

Is reserved for future use.

statMajorVersionNum

Specifies the major version number of the statistics table.

statMinorVersionNum

Specifies the minor version number of the statistics table.

commonCounters

Specifies the number of counters in the fixed portion of the table, current 3.

validCountersMask

Specifies which counters are valid, right most bit for the first counter; 0 = Counter is valid, 1 = Counter is invalid

totalTxPackets

Contains the total number of packets that were requested to be transmitted.

totalRxPackets

Specifies the total number of packets that were requested to be transmitted.

ignoredRxPackets

Specifies the number of incoming packets that were ignored by the stack.

numCustomCounters

Specifies the number of custom counters for the protocol stack.

NWFSE_SERVER_INFO

Returns server information. Used by NWGetServerInfo (page 147).

Service: Server Environment

Defined In: nwfse.h

Structure

```
typedef struct
{
   SERVER_AND_VCONSOLE_INFO   serverTimeAndVConsoleInfo ;
   nuint16                    reserved ;
   nuint8                     serverAddress [12];
   nuint16                    hopsToServer ;
} NWFSE_SERVER_INFO;
```

Delphi Structure

```
uses calwin32

NWFSE_SERVER_INFO = packed Record
   serverTimeAndVConsoleInfo : SERVER_AND_VCONSOLE_INFO;
   reserved : nuint16;
   padding  : nuint16;
   serverAddress : Array[0..11] Of nuint8;
   hopsToServer : nuint16;
End;
```

Fields

serverTimeAndVConsoleInfo

Specifies the SERVER_AND_VCONSOLE_INFO (page 306) structure containing the time since the server was brought up. This time is returned in ticks (approximately 1/8 of a second). When this parameter reaches 0xFFFFFFFF, it wraps to zero.

reserved

Is reserved for future use.

serverAddress

contains the node address of the server.

hopsToServer

Contains the number of hops to the server.

NWFSE_SERVER_SET_CATEGORIES

Returns information about server set categories. Used by NWGetServerSetCategories (page 149).

Service: Server Environment

Defined In: nwfse.h

Structure

```
typedef struct
{
   SERVER_AND_VCONSOLE_INFO   serverTimeAndVConsoleInfo;
   nuint16                    reserved ;
   nuint32                    numberOfSetCategories ;
   nuint32                    nextSequenceNumber ;
   nuint8                     categoryName [512];
} NWFSE_SERVER_SET_CATEGORIES;
```

Delphi Structure

```
uses calwin32

  NWFSE_SERVER_SET_CATEGORIES = packed Record
    serverTimeAndVConsoleInfo : SERVER_AND_VCONSOLE_INFO;
    reserved : nuint16;
    padding  : nuint16;
    numberOfSetCategories : nuint32;
    nextSequenceNumber : nuint32;
    categoryName : Array[0..511] Of nuint8;
  End;
```

Fields

serverTimeAndVConsoleInfo

Specifies the SERVER_AND_VCONSOLE_INFO (page 306) structure containing the time since the server was brought up. This time is returned in ticks (approximately 1/8 of a second). When this parameter reaches 0xFFFFFFFF, it wraps to zero.

reserved

Is reserved for future use.

numberOfSetCategories

Specifies the total number of set categories supported on the server.

nextSequenceNumber

Specifies the number to be used for `startNum` on subsequent calls.

categoryName

Specifies the null-terminated (not length-preceded) string describing the category.

NWFSE_SERVER_SET_CMDS_INFO

Returns server set command information. Used by NWGetServerSetCommandsInfo (page 151).

Service: Server Environment

Defined In: nwfse.h

Structure

```
typedef struct
{
   SERVER_AND_VCONSOLE_INFO    serverTimeAndVConsoleInfo ;
   nuint16                     reserved ;
   nuint32                     numberOfSetCommands ;
   nuint32                     nextSequenceNumber ;
   nuint32                     setCmdType ;
   nuint32                     setCmdCategory ;
   nuint32                     setCmdFlags ;
   nuint8                      setNameAndValueInfo [500];
} NWFSE_SERVER_SET_CMDS_INFO;
```

Delphi Structure

```
uses calwin32

  NWFSE_SERVER_SET_CMDS_INFO = packed Record
    serverTimeAndVConsoleInfo : SERVER_AND_VCONSOLE_INFO;
    reserved : nuint16;
    padding  : nuint16;
    numberOfSetCommands : nuint32;
    nextSequenceNumber : nuint32;
    setCmdType : nuint32;
    setCmdCategory : nuint32;
    setCmdFlags : nuint32;
    setNameAndValueInfo : Array[0..499] Of nuint8;
  End;
```

Fields

serverTimeAndVConsoleInfo

Specifies the SERVER_AND_VCONSOLE_INFO (page 306) structure containing the time since the server was brought up. This time is returned in ticks (approximately 1/8 of a second). When this parameter reaches 0xFFFFFFFF, it wraps to zero.

reserved

Is reserved for future use.

numberOfSetCommands

Specifies the total number of set commands for all the categories on the server.

nextSequenceNumber

Specifies the next number to be used for `startNum` on the next call.

setCmdType

Specifies how to interpret the command as follows:

```
0    FSE_TYPE_NUMBER
1    FSE_TYPE_BOOLEAN
2    FSE_TYPE_TICKS
3    FSE_TYPE_BLOCK_SHIFT (512*number)
4    FSE_TYPE_TIME_OFFSET ([+|-]hh:mm:ss converted to seconds )
5    FSE_TYPE_STRING
6    FSE_TYPE_TRIGGER
```

The following show the types of triggers:

```
0x00   FSE_TYPE_TRIGGER_OFF
0x01   FSE_TYPE_TRIGGER_ON
0x10   FSE_TYPE_TRIGGER_PENDING
0x20   FSE_TYPE_TRIGGER_SUCCESS
0x30   FSE_TYPE_TRIGGER_FAILED
```

setCmdCategory

Specifies the category the command belongs to, as follows:

```
0    FSE_COMMUNICATIONS
1    FSE_MEMORY
2    FSE_FILE_CACHE
3    FSE_DIR_CACHE
4    FSE_FILE_SYSTEM
5    FSE_LOCKS
6    FSE_TRANSACTION_TRACKING
7    FSE_DISK
8    FSE_TIME
9    FSE_NCP
10   FSE_MISCELLANEOUS
11   FSE_ERRORS
12   FSE_DIRECTORY_SERVICES
13   FSE_MULTIPROCESSOR
14   FSE_SERVICE_LOCATION_PROTOCOL
```

setCmdFlags

Specifies the ways in which this category may be changed, as follows:

```
0x01   FSE_STARTUP_ONLY
0x02   FSE_HIDE
0x04   FSE_ADVANCED
0x08   FSE_STARTUP_OR_LATER
0x10   FSE_NOT_SECURED_CONSOLE (Can't be performed on secured
                                 console)
```

setNameAndValueInfo

Specifies the NULL-terminated string containing the name of the command at index zero, and the value that begins at strlen(name)+1. The string is not length-preceded.

NWFSE_SERVER_SRC_INFO

Returns address information about servers known to a server with a given name. Used by NWGetServerSourcesInfo (page 153).

Service: Server Environment

Defined In: nwfse.h

Structure

```
typedef struct
{
    SERVER_AND_VCONSOLE_INFO    serverTimeAndVConsoleInfo;
    nuint16                     reserved ;
    nuint32                     numberOfEntries ;
    SERVERS_SRC_INFO            serverSrcInfo[42];
} NWFSE_SERVER_SRC_INFO;
```

Delphi Structure

```
uses calwin32

 NWFSE_SERVER_SRC_INFO = packed Record
    serverTimeAndVConsoleInfo : SERVER_AND_VCONSOLE_INFO;
    reserved : nuint16;
    padding  : nuint16;
    numberOfEntries : nuint32;
    serversSrcInfo : Array[0..41] Of SERVERS_SRC_INFO;
  End;
```

Fields

serverTimeAndVConsoleInfo

Specifies the SERVER_AND_VCONSOLE_INFO (page 306) structure containing the time since the server was brought up. This time is returned in ticks (approximately 1/8 of a second). When this parameter reaches 0xFFFFFFFF, it wraps to zero.

reserved

Is reserved for future use.

numberOfEntries

Specifies the number of SERVERS_SRC_INFOs that were returned byNWGetServerSourcesInfo (page 153) .

serverSrcInfo

Specifies SERVERS_SRC_INFO (page 307).

NWFSE_STATS_INFO

Returns Server Environment statistical information. Used by NWGetServerConnInfo (page 143).

Service: Server Environment

Defined In: nwfse.h

Structure

```
typedef struct
{
   nuint8    totalBytesRead[6];
   nuint8    totalBytesWritten[6];
   nuint32   totalRequests;
} NWFSE_STATS_INFO;
```

Delphi Syntax

```
uses calwin32

  NWFSE_STATS_INFO = packed RECORD
      totalBytesRead : Array[1..6] of nuint8;
      totalBytesWritten : Array[1..6] of nuint8;
      totalRequests : nuint32;
  End;
```

Fields

totalBytesRead

   Specifies the number of bytes the user read (48-bit value).

totalBytesWritten

   Specifies the number of bytes the user wrote (48-bit value).

totalRequests

   Specifies the number of requests the user sent.

NWFSE_USER_INFO

Returns user information for a given connection. Used by NWGetUserInfo (page 155).

Service: Server Environment

Defined In: nwfse.h

Structure

```
typedef struct
{
   SERVER_AND_VCONSOLE_INFO   serverTimeAndVConsoleInfo ;
   nuint16                    reserved ;
   USER_INFO                  userInfo ;
} NWFSE_USER_INFO;
```

Delphi Structure

```
 uses calwin32

  NWFSE_USER_INFO = packed Record
    serverTimeAndVConsoleInfo : SERVER_AND_VCONSOLE_INFO;
    reserved : nuint16;
    padding : nuint16;
    userInfo : USER_INFO;
  End;
```

Fields

serverTimeAndVConsoleInfo

Specifies the SERVER_AND_VCONSOLE_INFO (page 306) structure containing the time since the server was brought up. This time is returned in ticks (approximately 1/8 of a second). When this parameter reaches 0xFFFFFFFF, it wraps to zero.

reserved

Is reserved for future use.

userInfo

Contains a USER_INFO (page 312)structure for the connection. The UserInformation structure is defined in NWSERVST.H.

NWFSE_VOLUME_INFO_BY_LEVEL

Returns volume information when the information level is specified. Used by
NWGetVolumeInfoByLevel (page 157).

Service: Server Environment

Defined In: nwfse.h

Structure

```
typedef struct {
   SERVER_AND_VCONSOLE_INFO    serverTimeAndVConsoleInfo ;
   nuint16                     reserved ;
   nuint32                     infoLevel ;
   VOLUME_INFO_BY_LEVEL        volumeInfo ;
} NWFSE_VOLUME_INFO_BY_LEVEL;
```

Delphi Structure

```
uses calwin32

  NWFSE_VOLUME_INFO_BY_LEVEL = packed Record
    serverAndVConsoleInfo : SERVER_AND_VCONSOLE_INFO;
    reserved : nuint16;
    padding  : nuint16;
    infoLevel : nuint32;
    volumeInfo : VOLUME_INFO_BY_LEVEL;
  End;
```

Fields

serverTimeAndVConsoleInfo

Specifies the SERVER_AND_VCONSOLE_INFO (page 306) structure containing the time
since the server was brought up. This time is returned in ticks (approximately 1/8 of a second).
When this parameter reaches 0xFFFFFFFF, it wraps to zero.

reserved

Is reserved (pass zero).

infoLevel

Specifies the information level to be returned.

If this field is set to 1, the `volInfoDef` field of the VOLUME_INFO_BY_LEVEL
(page 319) structure will be used.

If this field is set to 2, the `volInfoDef2` field of the VOLUME_INFO_BY_LEVEL
structure will be used.

volumeInfo

Points to the VOLUME_INFO_BY_LEVEL (page 319) structure containing the specified
volume information.

NWFSE_VOLUME_SEGMENT_LIST

Returns the volume segment list. Used by NWGetVolumeSegmentList (page 159).

Service: Server Environment

Defined In: nwfse.h

Structure

```
typedef struct
{
   SERVER_AND_VCONSOLE_INFO   serverTimeAndVConsoleInfo ;
   nuint16                    reserved ;
   nuint32                    numOfVolumeSegments ;
   VOLUME_SEGMENT             volumeSegment [42];
} NWFSE_VOLUME_SEGMENT_LIST;
```

Delphi Structure

```
uses calwin32

  NWFSE_VOLUME_SEGMENT_LIST = packed Record
    serverTimeAndVConsoleInfo : SERVER_AND_VCONSOLE_INFO;
    reserved : nuint16;
    padding  : nuint16;
    numOfVolumeSegments : nuint32;
    volumeSegment : Array[0..41] Of VOLUME_SEGMENT;
  End;
```

Fields

serverTimeAndVConsoleInfo

Specifies the SERVER_AND_VCONSOLE_INFO (page 306) structure containing the time since the server was brought up. This time is returned in ticks (approximately 1/8 of a second). When this parameter reaches 0xFFFFFFFF, it wraps to zero.

reserved

Is reserved for future use.

numOfVolumeSegments

Specifies the number of volume segments on the volume.

volumeSegment

Specifies the volume information structures for all the volume segments on the volume. Only the number of structures will contain valid data.

NWFSE_VOLUME_SWITCH_INFO

Returns information about volume switches. Used by NWGetVolumeSwitchInfo (page 161).

Service: Server Environment

Defined In: nwfse.h

Structure

```
typedef struct {
   SERVER_AND_VCONSOLE_INFO    serverTimeAndVConsoleInfo ;
   nuint16                     reserved ;
   nuint32                     totalLFSCounters ;
   nuint32                     CurrentLFSCounters ;
   nuint32                     LFSCounters [128];
} NWFSE_VOLUME_SWITCH_INFO;
```

Delphi Structure

```
uses calwin32

  NWFSE_VOLUME_SWITCH_INFO = packed Record
    serverTimeAndVConsoleInfo : SERVER_AND_VCONSOLE_INFO;
    reserved : nuint16;
    padding  : nuint16;
    totalLFSCounters : nuint32;
    CurrentLFSCounters : nuint32;
    LFSCounters : Array[0..127] Of nuint32;
  End;
```

Fields

serverTimeAndVConsoleInfo

Specifies the SERVER_AND_VCONSOLE_INFO (page 306) structure containing the time since the server was brought up. This time is returned in ticks (approximately 1/8 of a second). When this parameter reaches 0xFFFFFFFF, it wraps to zero.

reserved

Is reserved (pass zero).

totalLFSCounters

Specifies the total number of FS counters.

CurrentLFSCounters

Specifies the current number of FS counters.

LFSCounters

Specifies the number of LFS counters.

NW_GUID

Contains the server's Global Universal Identification (GUID).

Service: Server Environment

Defined In: nwfse.h

Structure

```
typedef struct
{
   nuint8   GUID[16];
} NW_GUID;
```

Delphi Structure

```
Type
    NW_GUID = Array[0..15] of nuint8;
```

Fields

GUID

> Specifies the GUID for the server.

Remarks

The server's GUID is automatically generated by the OS the first time the server is brought up.

The Ethernet address of a LAN board is part the server's GUID. Once a LAN board is loaded, the GUID contains all zeros until a LAN board is loaded the first time.

The server GUID is kept in the registry so the initial GUID created for the server will be preserved across multiple reboots. If the registry is corrupted or deleted, the startup code will automatically generate a new server GUID as if this was the first time the server was brought up.

PACKET_BURST_INFO

Returns packet burst information.

Service: Server Environment

Defined In: nwfse.h

Structure

```
typedef struct
{
   nuint32   bigInvalidSlotCount ;
   nuint32   bigForgedPacketCount ;
   nuint32   bigInvalidPacketCount ;
   nuint32   bigStillTransmittingCount ;
   nuint32   stillDoingTheLastRequestCount ;
   nuint32   invalidCtrlRequestCount ;
   nuint32   ctrlInvalidMessageNumCount ;
   nuint32   ctrlBeingTornDownCount ;
   nuint32   bigRepeatTheFileReadCount ;
   nuint32   bigSendExtraCCCount ;
   nuint32   bigReturnAbortMessageCount ;
   nuint32   bigReadInvalidMessageNumCount ;
   nuint32   bigReadDoItOverCount ;
   nuint32   bigReadBeingTornDownCount ;
   nuint32   previousCtrlPacketCount ;
   nuint32   sendHoldOffMessageCount ;
   nuint32   bigReadNoDataAvailableCount ;
   nuint32   bigReadTryingToReadTooMuchCount ;
   nuint32   asyncReadErrorCount ;
   nuint32   bigReadPhysicalReadErrorCount ;
   nuint32   ctrlBadACKFragmentListCount ;
   nuint32   ctrlNoDataReadCount ;
   nuint32   writeDuplicateRequestCount ;
   nuint32   shouldntBeACKingHereCount ;
   nuint32   writeInconsistentPktLengthsCnt ;
   nuint32   firstPacketIsntAWriteCount ;
   nuint32   writeTrashedDuplicateRequestCnt ;
   nuint32   bigWriteInvalidMessageNumCount ;
   nuint32   bigWriteBeingTornDownCount ;
   nuint32   bigWriteBeingAbortedCount ;
   nuint32   zeroACKFragmentCountCount ;
   nuint32   writeCurrentlyTransmittingCount ;
   nuint32   tryingToWriteTooMuchCount ;
   nuint32   writeOutOfMemForCtrlNodesCount ;
   nuint32   writeDidntNeedThisFragmentCount ;
   nuint32   writeTooManyBuffsCheckedOutCnt ;
   nuint32   writeTimeOutCount ;
   nuint32   writeGotAnACKCount ;
   nuint32   writeGotAnACKCount1 ;
   nuint32   pollerAbortedTheConnCount ;
   nuint32   maybeHadOutOfOrderWritesCount ;
```

```
    nuint32    hadAnOutOfOrderWriteCount ;
    nuint32    movedTheACKBitDownCount ;
    nuint32    bumpedOutOfOrderWriteCount ;
    nuint32    pollerRemovedOldOutOfOrderCount ;
    nuint32    writeDidntNeedButRequestACKCnt ;
    nuint32    writeTrashedPacketCount ;
    nuint32    tooManyACKFragmentsCount ;
    nuint32    savedAnOutOfOrderPacketCount ;
    nuint32    connBeingAbortedCount ;
} PACKET_BURST_INFO;
```

Delphi Structure

```
uses calwin32

  PACKET_BURST_INFO = packed Record
    bigInvalidSlotCount : nuint32;
    bigForgedPacketCount : nuint32;
    bigInvalidPacketCount : nuint32;
    bigStillTransmittingCount : nuint32;
    stillDoingTheLastRequestCount : nuint32;
    invalidCtrlRequestCount : nuint32;
    ctrlInvalidMessageNumCount : nuint32;
    ctrlBeingTornDownCount : nuint32;
    bigRepeatTheFileReadCount : nuint32;
    bigSendExtraCCCount : nuint32;
    bigReturnAbortMessageCount : nuint32;
    bigReadInvalidMessageNumCount : nuint32;
    bigReadDoItOverCount : nuint32;
    bigReadBeingTornDownCount : nuint32;
    previousCtrlPacketCount : nuint32;
    sendHoldOffMessageCount : nuint32;
    bigReadNoDataAvailableCount : nuint32;
    bigReadTryingToReadTooMuchCount : nuint32;
    asyncReadErrorCount : nuint32;
    bigReadPhysicalReadErrorCount : nuint32;
    ctrlBadACKFragmentListCount : nuint32;
    ctrlNoDataReadCount : nuint32;
    writeDuplicateRequestCount : nuint32;
    shouldntBeACKingHereCount : nuint32;
    writeInconsistentPktLengthsCnt : nuint32;
    firstPacketIsntAWriteCount : nuint32;
    writeTrashedDuplicateRequestCnt : nuint32;
    bigWriteInvalidMessageNumCount : nuint32;
    bigWriteBeingTornDownCount : nuint32;
    bigWriteBeingAbortedCount : nuint32;
    zeroACKFragmentCountCount : nuint32;
    writeCurrentlyTransmittingCount : nuint32;
    tryingToWriteTooMuchCount : nuint32;
    writeOutOfMemForCtrlNodesCount : nuint32;
    writeDidntNeedThisFragmentCount : nuint32;
    writeTooManyBuffsCheckedOutCnt : nuint32;
    writeTimeOutCount : nuint32;
```

```
      writeGotAnACKCount : nuint32;
      writeGotAnACKCount1 : nuint32;
      pollerAbortedTheConnCount : nuint32;
      maybeHadOutOfOrderWritesCount : nuint32;
      hadAnOutOfOrderWriteCount : nuint32;
      movedTheACKBitDownCount : nuint32;
      bumpedOutOfOrderWriteCount : nuint32;
      pollerRemovedOldOutOfOrderCount : nuint32;
      writeDidntNeedButRequestACKCnt : nuint32;
      writeTrashedPacketCount : nuint32;
      tooManyACKFragmentsCount : nuint32;
      savedAnOutOfOrderPacketCount : nuint32;
      connBeingAbortedCount : nuint32;
   End;
```

Fields

bigInvalidSlotCount

> Specifies the number of requests determined not to be packet burst requests. The requests are either not NCP connections, the connection number is greater than available connection slots, or they have an invalid connection structure.

bigForgedPacketCount

> Specifies the number of times the station connection ID and unique IDs do not match the server'.

bigInvalidPacketCount

> Specifies the number of times the request packet is determined to be invalid.

bigStillTransmittingCount

> Specifies the number of times the previous request is still transmitting so the current requests are delayed.

stillDoingTheLastRequestCount

> Specifies the number of times the previous request is still being processed and read.

invalidCtrlRequestCount

> Specifies the number of times the type of the packet and the packet nature cannot be determined.

ctrlInvalidMessageNumCount

> Specifies the number of packets received that do not have a message number corresponding to what is already been sent and what is being inquired about.

ctrlBeingTornDownCount

> Specifies the number of times the connection is torn down.

bigRepeatTheFileReadCount

> Specifies the number of times an old request had to be reread.

bigSendExtraCCCount

Specifies the number of times the completion code error needed to be resent.

bigReturnAbortMessageCount

Specifies the number of times an `Abort Message' was returned to the server.

bigReadInvalidMessageNumCount

Specifies the number of times the message number comparison between the station and server failed.

bigReadDoItOverCount

Specifies the number of times a request that had been processed was received again and reprocessed.

bigReadBeingTornDownCount

Specifies the number of times the status flag is set to abort so the read is torn down before being processed.

previousCtrlPacketCount

Specifies the number of times the server packet ID does not compare to the station's packet ID.

sendHoldOffMessageCount

Specifies the number of times the station's request

bigReadNoDataAvailableCount

Specifies the number of times nothing was able to be read from the request packet.

bigReadTryingToReadTooMuchCount

Specifies the number of times the request packet was greater than 64K so was unreadable.

asyncReadErrorCount

Specifies the number of times an error is returned trying to read the data in from the request packet.

bigReadPhysicalReadErrorCount

Specifies the number of times a physical read error was encountered while reading the request packet.

ctrlBadACKFragmentListCount

Specifies the number of times the fragments making up the packet burst exceeded the maximum fragments allowed.

ctrlNoDataReadCount

Specifies the number of times a control packet was received specifying to send more data after the request was thought to be over. The station error confirmed the error that no control data was read.

writeDuplicateRequestCount

Specifies the number of times a duplicate write was performed after a duplicate request was processed.

shouldntBeACKingHereCount

Specifies the number of times a request was being initialized when a fragment count was found indicating the station still needs to send some fragments.

writeInconsistentPktLengthsCnt

Specifies the number of times consistency checking on packet lengths failed.

firstPacketIsntAWriteCount

Specifies the number of times the first fragment packet is not a write request.

writeTrashedDuplicateRequestCnt

Specifies the number of times a duplicate write request was received without a need to acknowledge receipt of the request so it was trashed.

bigWriteInvalidMessageNumCount

Specifies the number of times the message number comparison between the station and the server failed.

bigWriteBeingTornDownCount

Specifies the number of times the write is aborted and the connection is torn down.

bigWriteBeingAbortedCount

Specifies the number of times the write is aborted and the station is cleared up.

zeroACKFragmentCountCount

Specifies the number of times the request needs to be retried so the acknowledge fragment count is zeroed out.

writeCurrentlyTransmittingCount

Specifies the number of times data was currently being transmitted so the transmission needed to complete before writing.

tryingToWriteTooMuchCount

Specifies the number of times an attempt was made to write a total length greater than 64K.

writeOutOfMemForCtrlNodesCount

Is currently unused.

writeDidntNeedThisFragmentCount

Specifies the number of times that everything needed is already acquired so the write process is ended.

writeTooManyBuffsCheckedOutCnt

Specifies the number of times the next packet was received without received the first packet. If the buffer cannot be kept, buffers are not released.

writeTimeOutCount

Specifies the number of times the write retry limit was exceeded.

writeGotAnACKCount

Specifies the number of times the client is resending part or all of the request back because the request timed out and there are missing pieces.

writeGotAnACKCount1

Specifies the number of times the client is resending part or all of the request back because the request timed out and there are missing pieces.

pollerAbortedTheConnCount

Specifies the number of times the poller lost track of the connection and the connection was cleared.

maybeHadOutOfOrderWritesCount

Specifies the number of times that extra packets for the write came in and needed to be reordered before a write completed.

hadAnOutOfOrderWriteCount

Specifies the number of times out of order packets were received and needed to be requested in the right order.

movedTheACKBitDownCount

Specifies the number of times out of order packets were reordered and information that was buffered up will not be re-requested by the out of order writes.

bumpedOutOfOrderWriteCount

Specifies the number of times packets needing to be reordered could not be reordered. The packets were thrown out and need to be resent.

pollerRemovedOldOutOfOrderCount

Specifies the number of times the write received buffers that were removed because they were on the out of order list too long.

writeDidntNeedButRequestACKCnt

Specifies the number of times the fragment count was zero indicating no new fragments were expected but the acknowledge bit was checked.

writeTrashedPacketCount

Specifies the number of times the cleaning up of additional receive buffers queued up during the execution of an error path.

tooManyACKFragmentsCount

Specifies the number of times a fragment placement needed to be adjusted.

savedAnOutOfOrderPacketCount

Specifies the number of times an out of order packet was received, saved for several seconds, and the buffer then moved onto the out of order write list.

connBeingAbortedCount

Specifies the number of times a station's connection was aborted.

PHYS_DSK_STATS

Returns physical disk statistics.

Service: Server Environment

Defined In: nwfse.h

Structure

```
typedef struct
{
   nuint32   systemElapsedTime ;
   nuint8    diskChannel ;
   nuint8    diskRemovable ;
   nuint8    driveType ;
   nuint8    controllerDriveNumber ;
   nuint8    controllerNumber ;
   nuint8    controllerType ;
   nuint32   driveSize ;/*in 4096 byte blocks*/
   nuint16   driveCylinders ;
   nuint8    driveHeads ;
   nuint8    sectorsPerTrack ;
   nuint8    driveDefinition [64];
   nuint16   IOErrorCount ;
   nuint32   hotFixStart ;
   nuint16   hotFixSize ;
   nuint16   hotFixBlockAvailable ;
   nuint8    hotFixDisabled ;
} PHYS_DSK_STATS;
```

Delphi Structure

```
uses calwin32

PHYS_DSK_STATS = packed Record
    systemElapsedTime : nuint32;
    diskChannel : nuint8;
    diskRemovable : nuint8;
    driveType : nuint8;
    controllerDriveNumber : nuint8;
    controllerNumber : nuint8;
    controllerType : nuint8;
    driveSize : nuint32;
    driveCylinders : nuint16;
    driveHeads : nuint8;
    sectorsPerTrack : nuint8;
    driveDefinition : Array[0..63] Of nuint8;
    IOErrorCount : nuint16;
    hotFixStart : nuint32;
    hotFixSize : nuint16;
    hotFixBlockAvailable : nuint16;
```

```
    hotFixDisabled : nuint8;
  End;
```

Fields

systemElapsedTime

> Specifies how long the NetWare server has been up. This value is returned in units of approximately 1/18 second and is used to determine the amount of time that has elapsed between consecutive calls. When systemElapsedTime reaches 0xFFFFFFFF, it wraps back to zero.

diskChannel

> Specifies the disk channel to which the disk unit is attached.

diskRemovable

> Specifies whether a disk is removable (0 = nonremovable).

driveType

> Specifies the type of drive, defined as follows:

```
1    XT
2    AT
3    SCSI
4    disk coprocessor
5    PS/2 with MFM Controller
6    PS/2 with ESDI Controller
7    Convergent Technology SBIC
50 to 255   Value-Added Disk Drive
```

controllerDriveNumber

> Specifies the drive number of the disk unit relative to the controller number.

controllerNumber

> Specifies the address on the physical disk channel of the disk controller.

controllerType

> Specifies the number identifying the type (make and model) of the disk controller.

driveSize

> Specifies the size of the physical drive in blocks (1 block = 4,096 bytes). The drive size does not include the portion of the disk reserved for Hot Fix redirection in the event of media errors.

driveCylinders

> Specifies the number of physical cylinders on the drive.

driveHeads

> Specifies the number of disk heads on the drive.

sectorsPerTrack

> Specifies the number of sectors on each disk track (1 sector = 512 bytes).

driveDefinition

Specifies the make and model of the drive (NULL-terminated string).

`IOErrorCount`

Specifies the number of times I/O errors have occurred on the disk since the server was brought up.

`hotFixStart`

Specifies the first block of the disk Hot Fix Redirection Table. This field is meaningful only with SFT(tm) NetWare Level I or above. The redirection table is used to replace bad disk blocks with usable blocks in the event that a media failure occurs on the disk

`hotFixSize`

Specifies the total number of redirection blocks set aside on the disk for Hot Fix redirection. Some or all of these blocks may be in use. `hotFixSize` is meaningful only with SFT NetWare Level I or above. To determine the number of redirection blocks still available for future use, see `hotFixBlocksAvailable`

`hotFixBlockAvailable`

Specifies the number of redirection blocks that are still available. `hotFixBlockAvailable` is meaningful only on SFT NetWare Level I or above.

`hotFixDisabled`

Specifies whether Hot Fix is enabled or disabled. `hotFixDisabled` is meaningful only with SFT NetWare Level I or above (0 = enabled).

resourceTagBuf

Returns information about resources used by NLMs on a server.

Service: Server Environment

Defined In: nwfse.h

Structure

```
typedef struct
{
   nuint32   number ;
   nuint32   signature ;
   nuint32   count ;
   nuint8    name [];
} resourceTagBuf;
```

Fields

number

   Contains the number assigned to the resource tag when it was allocated.

signature

   Contains the signature of the resource tag.

count

   Contains the number of this kind of tag that has been allocated.

name

   Contains the name of the resource tag.

ROUTERS_INFO

Returns information about the routers on a network.

Service: Server Environment

Defined In: nwfse.h

Structure

```
typedef struct
{
   nuint8    nodeAddress [6];
   nuint32   connectedLAN ;
   nuint16   routeHops ;
   nuint16   routeTime ;
} ROUTERS_INFO;
```

Delphi Structure

```
uses calwin32

  ROUTERS_INFO = packed Record
    nodeAddress : Array[0..5] Of nuint8;
    connectedLAN : nuint32;
    routeHops : nuint16;
    routeTime : nuint16;
  End;
```

Fields

nodeAddress

Contains the 6-byte network address of the router.

connectedLAN

Contains the LAN board number of the router.

routeHops

Contains the number of hops to the network specified by `networkNumber`.

routeTime

Contains the time (in ticks) to the network specified by `networkNumber`.

SERVER_AND_VCONSOLE_INFO

Service: Server Environment

Defined In: nwfse.h

Structure

```
typedef struct
{
   nuint32   currentServerTime ;
   nuint8    vconsoleVersion ;
   nuint8    vconsoleRevision ;
} SERVER_AND_VCONSOLE_INFO;
```

Delphi Structure

```
uses calwin32

  SERVER_AND_VCONSOLE_INFO = packed Record
   currentServerTime : nuint32;
   vconsoleVersion : nuint8;
   vconsoleRevision : nuint8
  End;
```

Fields

currentServerTime

Specifies the time in ticks (about 1/18 second) since the server was brought up. When `currentServerTime` reaches 0xFFFFFFFF, it wraps to 0.

NOTE: The tick count is derived from the original PC NTSC crystal frequency of 14.317180 MHz divided by 12 which is about 1.193MHz. The PC's 8253/8254 PIT further divides this clock by 65536 to generate an interrupt 18.207 times a second which approximates to one interrupt every 54.925 mS.

vconsoleVersion

Specifies the console version number and tracks the packet format.

vconsoleRevision

Specifies the console version revision number and tracks the packet format.

SERVERS_SRC_INFO

Service: Server Environment

Defined In: nwfse.h

Structure

```
typedef struct
{
   nuint8    serverNode [6];
   nuint32   connectedLAN ;
   nuint16   sourceHops ;
} SERVERS_SRC_INFO;
```

Delphi Structure

```
uses calwin32

  SERVERS_SRC_INFO = packed Record
    serverNode : Array[0.. 6 -1] Of nuint8;
    connectedLAN : nuint32;
    sourceHops : nuint16;
  End;
```

Fields

serverNode

   Specifies the node address of the server.

connectedLAN

   Specifies the LAN board number of the server.

sourceHops

   Specifies the number of hops to the server.

SPX_INFO

Returns information about the SPX protocol.

Service: Server Environment

Defined In: nwfse.h

Structure

```
typedef struct
{
   nuint16   SPXMaxConnsCount ;
   nuint16   SPXMaxUsedConns ;
   nuint16   SPXEstConnReq ;
   nuint16   SPXEstConnFail ;
   nuint16   SPXListenConnectReq ;
   nuint16   SPXListenConnectFail ;
   nuint32   SPXSendCount ;
   nuint32   SPXWindowChokeCount ;
   nuint16   SPXBadSendCount ;
   nuint16   SPXSendFailCount ;
   nuint16   SPXAbortedConn ;
   nuint32   SPXListenPacketCount ;
   nuint16   SPXBadListenCount ;
   nuint32   SPXIncomingPacketCount ;
   nuint16   SPXBadInPacketCount ;
   nuint16   SPXSuppressedPackCount ;
   nuint16   SPXNoSesListenECBCount ;
   nuint16   SPXWatchDogDestSesCount ;
} SPX_INFO;
```

Delphi Structure

```
uses calwin32

 SPX_INFO = packed Record
    SPXMaxConnsCount : nuint16;
    SPXMaxUsedConns : nuint16;
    SPXEstConnReq : nuint16;
    SPXEstConnFail : nuint16;
    SPXListenConnectReq : nuint16;
    SPXListenConnectFail : nuint16;
    SPXSendCount : nuint32;
    SPXWindowChokeCount : nuint32;
    SPXBadSendCount : nuint16;
    SPXSendFailCount : nuint16;
    SPXAbortedConn : nuint16;
    SPXListenPacketCount : nuint32;
    SPXBadListenCount : nuint16;
    SPXIncomingPacketCount : nuint32;
    SPXBadInPacketCount : nuint16;
    SPXSuppressedPackCount : nuint16;
```

```
    SPXNoSesListenECBCount : nuint16;
    SPXWatchDogDestSesCount : nuint16;
  End;
```

Fields

SPXMaxConnsCount

Specifies the maximum number of SPX™ connections allowed on the server.

SPXMaxUsedConns

Specifies the maximum number of SPX connections used at one time since the server was booted.

SPXEstConnReq

Specifies the total number of SPX connections established since the server was booted.

SPXEstConnFail

Specifies the number of times that an attempt to establish an SPX connection failed since the server was booted.

SPXListenConnectReq

Specifies the number of requests to post a listen since the server was booted.

SPXListenConnectFail

Specifies the number of times a request to post a listen failed since the server was booted.

SPXSendCount

Specifies the number of SPX packets sent since the server was booted.

SPXWindowChokeCount

Specifies the value used internally for debugging.

SPXBadSendCount

Specifies the number of bad packets sent since the server was booted.

SPXSendFailCount

Specifies the number of packets sent for which no acknowledgment was received since the server was booted.

SPXAbortedConn

Specifies the number of times a connection was aborted since the server was booted.

SPXListenPacketCount

Specifies the number of times a listen was posted on a socket since the server was booted.

SPXBadListenCount

Specifies the number of times a listen on a socket failed since the server was booted.

SPXIncomingPacketCount

Specifies the number of packets in the queue.

SPXBadInPacketCount

Specifies the number of bad SPX packets received since the server was booted.

SPXSuppressedPackCount

Specifies the number of times a duplicate SPX packet was received since the server was booted.

SPXNoSesListenECBCount

Specifies the number of times a listen was posted on a session that was not established since the server was booted.

SPXWatchDogDestSesCount

Specifies the number of times the watchdog destroyed a session since the server was booted.

STACK_INFO

Returns information about the stack.

Service: Server Environment

Defined In: nwfse.h

Structure

```
typedef struct
{
   nuint32    StackNum ;
   nuint8     StackShortName [16];
} STACK_INFO;
```

Delphi Structure

```
uses calwin32

  STACK_INFO = packed Record
    StackNum : nuint32;
    StackShortName : Array[0..15] Of nuint8;
  End;
```

Fields

StackNum

> Specifies the protocol number.

StackShortName

> Specifies the protocol short name with StackShortName being the length, and the rest of the name following. It is not null-terminated.

USER_INFO

Returns information about a user connection.

Service: Server Environment

Defined In: nwfse.h

Structure

```
typedef struct
{
   nuint32    connNum ;
   nuint32    useCount ;
   nuint8     connServiceType ;
   nuint8     loginTime [7];
   nuint32    status ;
   nuint32    expirationTime ;
   nuint32    objType ;
   nuint8     transactionFlag ;
   nuint8     logicalLockThreshold ;
   nuint8     recordLockThreshold ;
   nuint8     fileWriteFlags ;
   nuint8     fileWriteState ;
   nuint8     filler ;
   nuint16    fileLockCount ;
   nuint16    recordLockCount ;
   nuint8     totalBytesRead [6];
   nuint8     totalBytesWritten [6];
   nuint32    totalRequests ;
   nuint32    heldRequests ;
   nuint8     heldBytesRead [6];
   nuint8     heldBytesWritten [6];
} USER_INFO;
```

Delphi Structure

```
uses calwin32

 USER_INFO = packed Record
    connNum : nuint32;
    useCount : nuint32;
    connServiceType : nuint8;
    loginTime : Array[0..6] Of nuint8;
    status : nuint32;
    expirationTime : nuint32;
    objType : nuint32;
    transactionFlag : nuint8;
    logicalLockThreshold : nuint8;
    recordLockThreshold : nuint8;
    fileWriteFlags : nuint8;
    fileWriteState : nuint8;
    filler : nuint8;
```

```
    fileLockCount : nuint16;
    recordLockCount : nuint16;
    totalBytesRead : Array[0..5] Of nuint8;
    totalBytesWritten : Array[0..5] Of nuint8;
    totalRequests : nuint32;
    heldRequests : nuint32;
    heldBytesRead : Array[0..5] Of nuint8;
    heldBytesWritten : Array[0..5] Of nuint8;
  End;
```

Fields

connNum

Specifies the connection number of the user.

useCount

Specifies if the connection is in use:

1 Connection is in use
0 Connection is not in use

connServiceType

Specifies the connection type.

loginTime

Specifies the time the user logged in.

status

Specifies the status of the connection.

expirationTime

Specifies the expiration time.

objType

Specifies the object type of the user (usually 0x0100).

transactionFlag

Specifies the transaction tracking information.

logicalLockThreshold

Specifies the maximum number of logical locks a user can have.

recordLockThreshold

Specifies the maximum number of record locks the user can have.

fileWriteFlags

Specifies the writing status (includes active and stop bits):

1 FSE_WRITE
2 FSE_WRITE_ABORTED

fileWriteState

Specifies the writing status:

0 FSE_NOT_WRITING
1 FSE_WRITE_IN_PROGRESS
2 FSE_WRITE_BEING_STOPPED

filler

Is unused.

fileLockCount

Specifies the number of files the user locked.

recordLockCount

Specifies the number of records the user locked.

totalBytesRead

Specifies the number of bytes the user read (48-bit value).

totalBytesWritten

Specifies the number of bytes the user wrote (48-bit value).

totalRequests

Specifies the number of requests the user sent.

heldRequests

Specifies the number of requests held for accounting purposes.

heldBytesRead

Specifies the number of bytes the user read that have a hold on them for accounting purposes.

heldBytesWritten

Specifies the number of bytes the user wrote that have a hold on them for accounting purposes.

Remarks

connServiceType can have the following values:

2 FSE_NCP_CONNECTION_TYPE
3 FSE_NLM_CONNECTION_TYPE
4 FSE_AFP_CONNECTION_TYPE
5 FSE_FTAM_CONNECTION_TYPE
6 FSE_ANCP_CONNECTION_TYPE
7 FSE_ACP_CONNECTION_TYPE
8 FSE_SMB_CONNECTION_TYPE
9 FSE_WINSOCK_CONNECTION_TYPE
10 FSE_HTTP_CONNECTION_TYPE
11 FSE_UDP_CONNECTION_TYPE

status can have the following values:

0x00000001 FSE_LOGGED_IN
0x00000002 FSE_BEING_ABORTED
0x00000004 FSE_AUDITED
0x00000008 FSE_NEEDS_SECURITY_CHANGE
0x00000010 FSE_MAC_STATION
0x00000020 FSE_AUTHENTICATED_TEMPORARY
0x00000040 FSE_AUDIT_CONNECTION_RECORDED
0x00000080 FSE_DSAUDIT_CONNECTION_RECORDED

VERSION_INFO

Returns version information about the logical components of a NetWare server.

Service: Server Environment

Defined In: nwserver.h

Structure

```
typedef struct
{
   nuint8    serverName [48];
   nuint8    fileServiceVersion ;
   nuint8    fileServiceSubVersion ;
   nuint16   maximumServiceConnections ;
   nuint16   connectionsInUse ;
   nuint16   maxNumberVolumes ;
   nuint8    revision ;
   nuint8    SFTLevel ;
   nuint8    TTSLevel ;
   nuint16   maxConnectionsEverUsed ;
   nuint8    accountVersion ;
   nuint8    VAPVersion ;
   nuint8    queueVersion ;
   nuint8    printVersion ;
   nuint8    virtualConsoleVersion ;
   nuint8    restrictionLevel ;
   nuint8    internetBridge ;
   nuint8    reserved [60];
} VERSION_INFO;
```

Delphi Structure

```
uses calwin32

  VERSION_INFO = packed Record
    serverName : Array[0..47] Of nuint8;
    fileServiceVersion : nuint8;
    fileServiceSubVersion : nuint8;
    maximumServiceConnections : nuint16;
    connectionsInUse : nuint16;
    maxNumberVolumes : nuint16;
    revision : nuint8;
    SFTLevel : nuint8;
    TTSLevel : nuint8;
    maxConnectionsEverUsed : nuint16;
    accountVersion : nuint8;
    VAPVersion : nuint8;
    queueVersion : nuint8;
    printVersion : nuint8;
    virtualConsoleVersion : nuint8;
    restrictionLevel : nuint8;
```

```
    internetBridge : nuint8;
    reserved : Array[0..59] Of nuint8;
  End;
```

Fields

serverName

Specifies the name of the queried server.

fileServiceVersion

Specifies the major NetWare version number of the running server.

fileServiceSubVersion

Specifies the minor NetWare version number of the running server.

maximumServiceConnections

Specifies the maximum number of connection slots (licensed or unlicensed) that the server has allocated since it came up, which is not the same as how many connections the server can support.

connectionsInUse

Specifies how many connections are currently using the server at the time of the query.

maxNumberVolumes

Specifies the maximum number of volumes the server supports.

revision

Specifies the revision level of the NetWare version number running on the server.

SFTLevel

Specifies which SFT level the server operating system is using.

TTSLevel

Specifies which TTS level the server operating system is using.

maxConnectionsEverUsed

Specifies the maximum number of licensed connections in use at one time since the server was installed.

accountVersion

Specifies the accounting version number.

VAPVersion

Specifies the VAP version number, which is only used with NetWare versions prior to 3.0.

queueVersion

Specifies the queuing version number.

printVersion

Specifies the Print Server version number.

virtualConsoleVersion

    Specifies the Virtual Console version number.

restrictionLevel

    Specifies the Security Restriction version number.

internetBridge

    Specifies the Internet Bridge support version number.

reserved

    Is reserved for future use.

Remarks

To get product version information (major, minor, and revision), call the
NWGetNetWareProductVersion (page 114) function.

VOLUME_INFO_BY_LEVEL

Returns volume information.

Service: Server Environment

Defined In: nwfse.h

Structure

```
typedef union
{
   VOLUME_INFO_BY_LEVEL_DEF     volInfoDef ;
   VOLUME_INFO_BY_LEVEL_DEF2    volInfoDef2 ;
}  VOLUME_INFO_BY_LEVEL;
```

Delphi Syntax

```
Type
  VOLUME_INFO_BY_LEVEL = packed RECORD
     case integer of
        1: (volinfoDef : VOLUME_INFO_BY_LEVEL_DEF);
        2: (volinfoDef2 : VOLUME_INFO_BY_LEVEL_DEF2);
  End;
```

Fields

volInfoDef

> Pointer to VOLUME_INFO_BY_LEVEL_DEF (page 320).

volInfoDef2

> Pointer to VOLUME_INFO_BY_LEVEL_DEF2 (page 325).

VOLUME_INFO_BY_LEVEL_DEF

Returns volumen information.

Service: Server Environment

Defined In: nwfse.h

Structure

```
typedef struct
{
   nuint32   volumeType ;
   nuint32   statusFlagBits ;
   nuint32   sectorSize ;
   nuint32   sectorsPerCluster ;
   nuint32   volumeSizeInClusters ;
   nuint32   freedClusters ;
   nuint32   subAllocFreeableClusters ;
   nuint32   freeableLimboSectors ;
   nuint32   nonFreeableLimboSectors ;
   nuint32   nonFreeableAvailSubAllocSectors ;
   nuint32   notUsableSubAllocSectors ;
   nuint32   subAllocClusters ;
   nuint32   dataStreamsCount ;
   nuint32   limboDataStreamsCount ;
   nuint32   oldestDeletedFileAgeInTicks ;
   nuint32   compressedDataStreamsCount ;
   nuint32   compressedLimboDataStreamsCount ;
   nuint32   unCompressableDataStreamsCount ;
   nuint32   preCompressedSectors ;
   nuint32   compressedSectors ;
   nuint32   migratedFiles ;
   nuint32   migratedSectors ;
   nuint32   clustersUsedByFAT ;
   nuint32   clustersUsedByDirectories ;
   nuint32   clustersUsedbyExtendedDirs ;
   nuint32   totalDirectoryEntries ;
   nuint32   unUsedDirectoryEntries ;
   nuint32   totalExtendedDirectoryExtants ;
   nuint32   unUsedExtendedDirectoryExtants ;
   nuint32   extendedAttributesDefined ;
   nuint32   extendedAttributeExtantsUsed ;
   nuint32   directoryServicesObjectID ;
   nuint32   volumeLastModifiedDateAndTime ;
} VOLUME_INFO_BY_LEVEL_DEF;
```

Delphi Structure

```
uses calwin32

  VOLUME_INFO_BY_LEVEL_DEF = packed Record
    volumeType : nuint32;
```

```
    statusFlagBits : nuint32;
    sectorSize : nuint32;
    sectorsPerCluster : nuint32;
    volumeSizeInClusters : nuint32;
    freedClusters : nuint32;
    subAllocFreeableClusters : nuint32;
    freeableLimboSectors : nuint32;
    nonFreeableLimboSectors : nuint32;
    nonFreeableAvailSubAllocSectors : nuint32;
    notUsableSubAllocSectors : nuint32;
    subAllocClusters : nuint32;
    dataStreamsCount : nuint32;
    limboDataStreamsCount : nuint32;
    oldestDeletedFileAgeInTicks : nuint32;
    compressedDataStreamsCount : nuint32;
    compressedLimboDataStreamsCount : nuint32;
    unCompressableDataStreamsCount : nuint32;
    preCompressedSectors : nuint32;
    compressedSectors : nuint32;
    migratedFiles : nuint32;
    migratedSectors : nuint2;
    clustersUsedByFAT : nunt32;
    clustersUsedByDirectories : nuint32;
    clustersUsedByExtendedDirs : nuint32;
    totalDirectoryEntries : nuint32;
    unUsedDirectoryEntries : nuint32;
    totalExtendedDirectoryExtants : nuint32;
    unUsedExtendedDirectoryExtants : nuint32;
    extendedAttributesDefined : nuint32;
    extendedAttributeExtantsUsed : nuint32;
    directoryServicesObjectID : nuint32;
    volumeLastModifiedDateAndTime : nuint32;
  End;
```

Fields

volumeType

Specifies the defined type of the current volume.

statusFlagBits

Specifies the options that are currently available on the volume.

sectorSize

Specifies the sector size (in bytes).

sectorsPerCluster

Specifies the number of sectors per cluster or block.

volumeSizeInClusters

Specifies the size of the volume (in clusters or blocks).

freedClusters

Specifies the number of clusters or blocks that are currently free for allocation (does not include space that is currently available from deleted or limbo files, nor space that could be reclaimed from the suballocation file system).

subAllocFreeableClusters

Specifies the space that can be reclaimed from the suballocation file system.

freeableLimboSectors

Specifies the disk space (in clusters or blocks) that can be freed from deleted files.

nonFreeableLimboSectors

Specifies the disk space (in clusters or blocks) that is currently in deleted files and is not aged enough to be classified as `freeableLimboClusters`.

nonFreeableAvailSubAllocSectors

Specifies the space available to the suballocation file system, but not freeable to return as clusters or blocks.

notUsableSubAllocSectors

Specifies the disk space that is wasted by the suballocation file system. These clusters cannot be allocated by the suballocation system or used a regular clusters or blocks.

subAllocClusters

Specifies the disk space being used by the suballocation file system.

dataStreamsCount

Specifies the number of data streams for real files that have data allocated to them.

limboDataStreamsCount

Specifies the number of data streams for deleted files that have data allocated to them.

oldestDeletedFileAgeInTicks

Specifies the current age of the oldest file (in ticks).

compressedDataStreamsCount

Specifies the number of data streams for compressed real files.

compressedLimboDataStreamsCount

Specifies the number of data streams for compressed deleted files.

unCompressableDataStreamsCount

Specifies the number of data streams that are not compressable (real and deleted).

preCompressedSectors

Specifies the amount of disk space that was allocated to all files before they were compressed (includes "hole" space).

compressedSectors

Specifies the amount of disk space that is used by all compressed files.

migratedFiles

Specifies the number of migrated files.

migratedSectors

Specifies the amount of migrated disk space (in sectors).

clustersUsedByFAT

Specifies the amount of disk space (in clusters or blocks) being used by the FAT table.

clustersUsedByDirectories

Specifies the amount of disk space (in clusters or blocks) being used by directories.

clustersUsedbyExtendedDirs

Specifies the amount of disk space (in clusters or blocks) being used by the extended directory space.

totalDirectoryEntries

Specifies the total number of directories that are available on the volume.

unUsedDirectoryEntries

Specifies the total number of directory entries that are not in use on the volume.

totalExtendedDirectoryExtants

Specifies the amount of extended directory space extants (128 bytes each) that are available on the volume.

unUsedExtendedDirectoryExtants

Specifies the amount of extended directory space extants (128 bytes each) that are not in use on the volume.

extendedAttributesDefined

Specifies the number of extended attributes that are defined on the volume.

extendedAttributeExtantsUsed

Specifies the number of extended directory extants that are used by the extended attributes.

directoryServicesObjectID

Specifies the NDS ID for the volume.

volumeLastModifiedDateAndTime

Specifies the last time any file or subdirectory on the volume was modified (as tracked by the OS).

Remarks

`volumeType` can have the following values:

0 VINetWare386
1 VINetWare286
2 VINetWare386x30
3 VINetWare386v31

`statusFlagBits` can have the following values:

0x01 SubAllocEnableBit
0x02 CompressionEnabledBit
0x04 MigrationEnableBit
0x08 AuditingEnabledBit
0x10 ReadOnlyEnableBit
0x20 ImmediatePurgeBit
0x80000000 NSSVolumeBit

VOLUME_INFO_BY_LEVEL_DEF2

Returns volume information.

Service: Server Environment

Defined In: nwfse.h

Structure

```
typedef struct
{
   nuint32   volumeActiveCount ;
   nuint32   volumeUseCount ;
   nuint32   mACRootIDs ;
   nuint32   volumeLastModifiedDateAndTime ;
   nuint32   volumeReferenceCount ;
   nuint32   compressionLowerLimit ;
   nuint32   outstandingIOs ;
   nuint32   outstandingCompressionIOs ;
   nuint32   compressionIOsLimit ;
} VOLUME_INFO_BY_LEVEL_DEF2;
```

Delphi Structure

```
uses calwin32

 VOLUME_INFO_BY_LEVEL_DEF2 = packed Record
    volumeActiveCount : nuint32;
    volumeUseCount : nuint32;
    mACRootIDs : nuint32;
    volumeLastModifiedDateAndTime : nuint32;
    volumeReferenceCount : nuint32;
    compressionLowerLimit : nuint32;
    outstandingIOs : nuint32;
    outstandingCompressionIOs : nuint32;
    compressionIOsLimit : nuint32;
  End;
```

Fields

volumeActiveCount

Specifies a per-volume count that indicates the volume currently has operations in progress that need to be completed before other actions (such as dismounting a volume) can be initiated.

volumeUseCount

Specifies a per-volume count that is incremented before directory cache requests and other writes to the directory can begin. This field is decremented when such operations complete.

mACRootIDs

Specifies the Directory Numbers of the Macintosh roots.

volumeLastModifiedDateAndTime

Specifies the last date and time that any subdirectory on the volume was modified.

volumeReferenceCount

Specifies the last modified reference count. This field is increment every time that MarkDirectoryChanged is called on the volume.

compressionLowerLimit

Specifies a value used to determine if a file will be smaller once it is compressed. On a volume with suballocation enabled, this value is set to 512; otherwise, it is determined (in part) by the defined block size of the volume.

outstandingIOs

Specifies the number of IO operations that are still in progress and have not yet completed.

outstandingCompressionIOs

Specifies the number of compression-related IO operations that are still in progress and have not yet completed.

compressionIOsLimit

Specifies a per-volume count of the number of IO operations that can be dedicated to compression as opposed to the number of regular reading and writing operations.

VOLUME_SEGMENT

Returns information about the segments in a volume.

Service: Server Environment

Defined In: nwfse.h

Structure

```
typedef struct
{
   nuint32   volumeSegmentDeviceNum ;
   nuint32   volumeSegmentOffset ;
   nuint32   volumeSegmentSize ;
} VOLUME_SEGMENT;
```

Delphi Structure

```
uses calwin32

  VOLUME_SEGMENT = packed Record
    volumeSegmentDeviceNum : nuint32;
    volumeSegmentOffset : nuint32;
    volumeSegmentSize : nuint32;
  End;
```

Fields

volumeSegmentDeviceNum

   Specifies the device the segment is located on.

volumeSegmentOffset

   Specifies the offset of the segment in bytes.

volumeSegmentSize

   Specifies the segment size in bytes.

Server Management Concepts

4

Server management allows you to manage server functions from the workstation. From the workstation you can

- Add a name space to a volume
- Mount and dismount volumes
- Excute an NCF fileson a server
- Load and unload NLMs
- Modifiy SET command values

Server Management Tasks

5

This section describes the common tasks associated with Server Management.

5.1 Managing Volumes

1 To mount a volume using either a volume name or a volume number, call NWSMMountVolume (page 347).

2 To dismount a volume using a volume name, call NWSMDismountVolumeByName (page 336).

3 To dismount a volume using a volume number, call NWSMDismountVolumeByNumber (page 338).

5.2 Managing a Volume's Name Space

1 To add a specified name space to a volume on a server, call NWSMAddNSToVolume (page 334).

5.3 Managing NCF Files

1 To execute a selected NCF file on a specified server, call NWSMExecuteNCFFile (page 340).

5.4 Managing NLMs

1 To load a selected NLM on a server, call NWSMLoadNLM (page 342).

2 To unload a selected NLM on a server, call NWSMUnloadNLM (page 353).

5.5 Managing SET Values

1 To change a SET integer value, call NWSMSetDynamicCmdIntValue (page 349).

2 To change a SET string value, call NWSMSetDynamicCmdStrValue (page 351).

Server Management Functions

6

This documentation alphabetically lists the server management functions and describes their purpose, syntax, parameters, and return values.

NWSMAddNSToVolume

Adds a specified name space to a mounted volume on a server

NetWare Server: 3.x, 4.x, 5.x, 6.x

Platform: NLM, Windows NT, Windows 95, Windows 98

Library: Cross-Platform NetWare Calls (CAL*.*)

Service: Server Management

Syntax

```
#include <nwsm.h>
or
#include <nwcalls.h>

N_EXTERN_LIBRARY NWCCODE NWSMAddNSToVolume
  (NWCONN_HANDLE    connHandle,
   nuint16          volNumber,
   nuint8           namspc);
```

Delphi Syntax

```
uses calwin32

Function NWSMAddNSToVolume
  (connHandle : NWCONN_HANDLE;
   volNumber : nuint16;
   namspc : nuint8
) : NWCCODE;
```

Parameters

connHandle

　(IN) Specifies the server connection handle which is being managed.

volNumber

　(IN) Specifies the volume number on which the name space will be loaded.

namspc

　(IN) Specifies the name space to load on the volume.

Return Values

These are common return values; see Return Values (*Return Values for C*) for more information.

0x0000	SUCCESS
0x00BF	No add name space string given

0x0205	Unable to add specified name space to a volume
0x8801	INVALID_CONNECTION
0x890A	NLM_INVALID_CONNECTION
0x8998	VOLUME_DOES_NOT_EXIST
0x89FB	ERR_NCP_NOT_SUPPORTED

Remarks

You must be logged into `connHandle`, be permanently authenticated, and have console operator rights at the minimum to call NWSMAddNSToVolume.

`namspc` values cannot be ORed; they may be added on each call. `namspc` values follow:

NW_NS_MAC
NW_NS_NFS
NW_NS_FTAM
NW_NS_OS2

Execute ADD NAME SPACE only once for each non-DOS naming convention you want to store on a volume.

Before you can add a name space to a volume, the volume and the name space module must both be loaded. See the NWSMLoadNLM (page 342) function.

NCP Calls

0x2222 135 5 Add Name Space To Volume

See Also

NWSMLoadNLM (page 342)

NWSMDismountVolumeByName

Dismounts a volume on a selected server

NetWare Server: 3.x, 4.x, 5.x, 6.x

Platform: NLM, Windows NT, Windows 95, Windows 98

Library: Cross-Platform NetWare Calls (CAL*.*)

Service: Server Management

Syntax

```
#include <nwsm.h>
or
#include <nwcalls.h>

N_EXTERN_LIBRARY NWCCODE NWSMDismountVolumeByName (
   NWCONN_HANDLE        connHandle,
   const nstr8 N_FAR   *volumeName);
```

Delphi Syntax

```
uses calwin32

Function NWSMDismountVolumeByName
  (connHandle : NWCONN_HANDLE;
   volumeName : pnstr8
) : NWCCODE;
```

Parameters

connHandle

   (IN) Specifies the server connection handle which is being managed.

volumeName

   (IN) Points to the NULL-terminated name of the NetWare volume to dismount.

Return Values

These are common return values; see Return Values (*NDK: Connection, Message, and NCP Extensions*)for more information.

0x0000	SUCCESS
0x00BF	Invalid `volumeName` string passed
0x0204	Unable to dismount specified volume name
0x8801	INVALID_CONNECTION
0x890A	NLM_INVALID_CONNECTION

0x8998	VOLUME_DOES_NOT_EXIST
0x89FB	ERR_NCP_NOT_SUPPORTED

Remarks

You must be logged into `connHandle`, be permanently authenticated, and have console operator rights at the minimum to call NWSMDismountVolumeByName.

NCP Calls

0x2222 131 4 Dismount Volume

See Also

NWSMMountVolume (page 347)

NWSMDismountVolumeByNumber

Dismounts a volume on a selected server

NetWare Server: 3.x, 4.x, 5.x, 6.x

Platform: NLM, Windows NT, Windows 95, Windows 98

Library: Cross-Platform NetWare Calls (CAL*.*)

Service: Server Management

Syntax

```
#include <nwsm.h>
or
#include <nwcalls.h>

N_EXTERN_LIBRARY NWCCODE NWSMDismountVolumeByNumber
  (NWCONN_HANDLE    connHandle,
   nuint16          volumeNumber);
```

Delphi Syntax

```
uses calwin32

Function NWSMDismountVolumeByNumber
  (connHandle : NWCONN_HANDLE;
   volumeNumber : nuint16
) : NWCCODE;
```

Parameters

connHandle

(IN) Specifies the server connection handle which is being managed.

volumeNumber

(IN) Specifies the number of the NetWare volume to dismount.

Return Values

These are common return values; see Return Values (*NDK: Connection, Message, and NCP Extensions*)for more information.

0x0000	SUCCESS
0x00BF	Invalid `volumeName` string passed
0x0204	Unable to dismount specified volume name
0x8801	INVALID_CONNECTION
0x890A	NLM_INVALID_CONNECTION

0x8998	VOLUME_DOES_NOT_EXIST
0x89FB	ERR_NCP_NOT_SUPPORTED

Remarks

You must be logged into `connHandle`, be permanently authenticated, and have console operator rights at the minimum to call NWSMDismountVolumeByNumber.

NCP Calls

0x2222 131 4 Dismount Volume

See Also

NWSMMountVolume (page 347)

NWSMExecuteNCFFile

Executes a selected NCF file on a specified server

NetWare Server: 3.x, 4.x, 5.x, 6.x

Platform: NLM, Windows NT, Windows 95, Windows 98

Library: Cross-Platform NetWare Calls (CAL*.*)

Service: Server Management

Syntax

```
#include <nwsm.h>
or
#include <nwcalls.h>

N_EXTERN_LIBRARY NWCCODE NWSMExecuteNCFFile (
   NWCONN_HANDLE        connHandle,
   const nstr8 N_FAR   *NCFFileName);
```

Delphi Syntax

```
uses calwin32

Function NWSMExecuteNCFFile
  (connHandle : NWCONN_HANDLE;
   NCFFileName : pnstr8
) : NWCCODE;
```

Parameters

connHandle

   (IN) Specifies the server connection handle which is being managed.

NCFFileName

   (IN) Points to the NULL-terminated name of the file to execute.

Return Values

These are common return values; see Return Values (*NDK: Connection, Message, and NCP Extensions*) for more information.

0x0000	SUCCESS
0x009E	No Path and Name field supplied
0x0207	Unable to execute NCF file
0x8801	INVALID_CONNECTION
0x890A	NLM_INVALID_CONNECTION

0x8993	INVALID_FILENAME
0x89FB	ERR_NCP_NOT_SUPPORTED

Remarks

You must be logged into `connHandle`, be permanently authenticated, and have console operator rights at the minimum to call NWSMExecuteNCFFile.

`fileName` may include a volume and path in the following format:

`{VOLUME NAME:}{PATH\...|file name}`

NCP Calls

0x2222 131 7 Execute NCF File

NWSMLoadNLM

Loads a selected NLM on a server

NetWare Server: 4.x, 5.x, 6.x

Platform: NLM, Windows NT, Windows 95, Windows 98

Library: Cross-Platform NetWare Calls (CAL*.*)

Service: Server Management

Syntax

```
#include <nwsm.h>
or
#include <nwcalls.h>

N_EXTERN_LIBRARY NWCCODE NWSMLoadNLM (
   NWCONN_HANDLE         connHandle,
   const nstr8 N_FAR   *loadCommand);
```

Delphi Syntax

```
uses calwin32

Function NWSMLoadNLM
  (connHandle : NWCONN_HANDLE;
   loadCommand : pnstr8
) : NWCCODE;
```

Parameters

connHandle

   (IN) Specifies the server connection handle which is being managed.

loadCommand

   (IN) Points to the load command for the NLM. It must be NULL terminated; maximum length is 482 bytes.

Return Values

These are common return values; see Return Values (*NDK: Connection, Message, and NCP Extensions*)for more information.

0x0000	SUCCESS
0x0202	Unable to load specified module
0x8801	INVALID_CONNECTION
0x890A	NLM_INVALID_CONNECTION

0x88FB	ERR_NCP_NOT_SUPPORTED
0x899E	INVALID_FILENAME

Remarks

You must be logged in with the connection specified by `connHandle`, be permanently authenticated, and have supervisor rights to call NWSMLoadNLM.

`loadCommand` can be any string that is valid for the LOAD command on the console (except it does not include the actual "LOAD" command). It contains the NLM name (including the path if it is not in the server path), and command line parameters if any.

The LOAD command has the following format:

`{VOLUME NAME:}{PATH\...}NLMname{.ext}{parameters}`

NWSMLoadNLM does not support UNC paths.

The NLM does not have to include the extensions. .NLM will be assumed if the extensions are not included.

The server console LOAD command is documented in the NetWare server utilities documentation.

NCP Calls

0x2222 131 1 Load A NLM

See Also

NWSMUnloadNLM (page 353)

NWSMLoadNLM2

Loads a selected NLM on a server

NetWare Server: 4.x, 5.x, 6.x

Platform: NLM, Windows NT, Windows 95, Windows 98

Library: Cross-Platform NetWare Calls (CAL*.*)

Service: Server Management

Syntax

```
#include <nwsm.h>
or
#include <nwcalls.h>

N_EXTERN_LIBRARY NWCCODE NWSMLoadNLM2 (
   NWCONN_HANDLE      connHandle,
   const nstr8 N_FAR *loadCommand,
   pnuint32           loadNLMReturnCode);
```

Delphi Syntax

```
uses calwin32

Function NWSMLoadNLM2
  (connHandle : NWCONN_HANDLE;
   loadCommand : const nstr8 N_FAR
   loadNLMReturnCode : pnuint32
) : NWCCODE;
```

Parameters

connHandle

　　(IN) Specifies the server connection handle which is being managed.

loadCommand

　　(IN) Points to the load command for the NLM. It must be NULL terminated; maximum length is 482 bytes.

loadNLMReturnCode

　　(OUT) Points to nuint32 variable which contains a return code from the loading NLM procedure in servers when the return code from NWSMLoadNLM2 is 0x0202. See the Remarks section for possible values.

Return Values

These are common return values; see Return Values (*NDK: Connection, Message, and NCP Extensions*) for more information.

0x0000	SUCCESS
0x0202	Unable to load specified module
0x8801	INVALID_CONNECTION
0x890A	NLM_INVALID_CONNECTION
0x88FB	ERR_NCP_NOT_SUPPORTED
0x899E	INVALID_FILENAME

Remarks

You must be logged in with the connection specified by connHandle, be permanently authenticated, and have a minimum of console operator rights to call NWSMLoadNLM2.

loadCommand can be any string that is valid for the LOAD command on the console (except it does not include the actual "LOAD" command). It contains the NLM name (including the path if it is not in the server path), and command line parameters if any.

The LOAD command has the following format:

```
{VOLUME NAME:}{PATH\...}NLMname{.ext}{parameters}
```

NWSMLoadNLM2 does not support UNC paths.

NWSMLoadNLM2 is an enhancement version of NWSMLoadNLM. It provides extra information to explain why the function cannot load an NLM.

The following values are possibilities when the loadNLMReturnCode is 0x0202:

```
LOAD_COULD_NOT_FIND_FILE              1
LOAD_ERROR_READING_FILE               2
LOAD_NOT_NLM_FILE_FORMAT              3
LOAD_WRONG_NLM_FILE_VERSION           4
LOAD_REENTRANT_INITIALIZE_FAILURE     5
LOAD_CAN_NOT_LOAD_MULTIPLE_COPIES     6
LOAD_ALREADY_IN_PROGRESS              7
LOAD_NOT_ENOUGH_MEMORY                8
LOAD_INITIALIZE_FAILURE               9
LOAD_INCONSISTENT_FILE_FORMAT         10
LOAD_CAN_NOT_LOAD_AT_STARTUP          11
LOAD_AUTO_LOAD_MODULES_NOT_LOADED     12
LOAD_UNRESOLVED_EXTERNAL              13
LOAD_PUBLIC_ALREADY_DEFINED           14
LOAD_XDC_DATA_ERROR                   15
LOAD_NOT_OS_DOMAIN                     16
```

NCP Calls

0x2222 131 1 Load A NLM

See Also

NWSMLoadNLM (page 342), NWSMUnloadNLM (page 353)

NWSMMountVolume

Mounts a volume on a selected server

NetWare Server: 3.x, 4.x, 5.x, 6.x

Platform: NLM, Windows NT, Windows 95, Windows 98

Library: Cross-Platform NetWare Calls (CAL*.*)

Service: Server Management

Syntax

```
#include <nwsm.h>
or
#include <nwcalls.h>

N_EXTERN_LIBRARY NWCCODE NWSMMountVolume (
   NWCONN_HANDLE        connHandle,
   const nstr8 N_FAR   *volumeName,
   pnuint32             volumeNumber);
```

Delphi Syntax

```
uses calwin32

Function NWSMMountVolume
  (connHandle : NWCONN_HANDLE;
   volumeName : pnstr8;
   volumeNumber : pnuint32
) : NWCCODE;
```

Parameters

connHandle

    (IN) Specifies the server connection handle which is being managed.

volumeName

    (IN) Points to the name of the NetWare volume to mount (must be NULL terminated).

volumeNumber

    (OUT) Points to the number of the volume.

Return Values

These are common return values; see Return Values (*NDK: Connection, Message, and NCP Extensions*) for more information.

0x0000	SUCCESS

0x00BF	Invalid `volumeName` string passed
0x0203	VOLUME_ALREADY_MOUNTED
0x8801	INVALID_CONNECTION
0x890A	NLM_INVALID_CONNECTION
0x89FB	ERR_NCP_NOT_SUPPORTED
0x8998	VOLUME_DOES_NOT_EXIST

Remarks

You must be logged into `connHandle`, be permanently authenticated, and have console operator rights at the minimum to call NWSMMountVolume.

If upon mounting a volume, an error occurs, and if the set parameters are such that VREPAIR will automatically execute, VREPAIR will execute and NWSMMountVolume will not return until VREPAIR has completed. The volume is then mounted.

NCP Calls

0x2222 131 3 Mount Volume

See Also

NWSMDismountVolumeByName (page 336), NWSMDismountVolumeByNumber (page 338)

NWSMSetDynamicCmdIntValue

Changes the current value of a set command (that takes in integer values) on a specified server

NetWare Server: 3.x, 4.x, 5.x, 6.x

Platform: NLM, Windows NT, Windows 95, Windows 98

Library: Cross-Platform NetWare Calls (CAL*.*)

Service: Server Management

Syntax

```
#include <nwsm.h>
or
#include <nwcalls.h>

N_EXTERN_LIBRARY NWCCODE NWSMSetDynamicCmdIntValue (
   NWCONN_HANDLE        connHandle,
   const nstr8 N_FAR   *setCommandName,
   nuint32              cmdValue;
```

Delphi Syntax

```
uses calwin32

Function NWSMSetDynamicCmdIntValue
  (connHandle : NWCONN_HANDLE;
   setCommandName : pnstr8;
   cmdValue : nuint32
) : NWCCODE;
```

Parameters

connHandle

  (IN) Specifies the server connection handle which is being managed.

setCommandName

  (IN) Points to the set parameter name. It must be NULL terminated.

cmdValue

  (IN) Specifies the new value for the set command parameter.

Return Values

These are common return values; see Return Values (*NDK: Connection, Message, and NCP Extensions*) for more information.

0x0000	SUCCESS

0x008C	Invalid type flag value
0x00BF	No `setCommandName` string
0x0206	Unable to set the command
0x8801	INVALID_CONNECTION
0x890A	NLM_INVALID_CONNECTION
0x89FB	ERR_NCP_NOT_SUPPORTED

Remarks

You must be logged into `connHandle`, be permanently authenticated, and have console operator rights at the minimum to call NWSMSetDynamicCmdIntValue.

The server console SET command is documented in the NetWare server utilities documentation. The SET values OFF/ON are treated as the integers 0 (zero) and 1 respectively; they are not treated as strings.

NCP Calls

0x2222 131 6 Set Command Value

See Also

NWGetServerSetCommandsInfo (page 151), NWGetServerSetCategories (page 149), NWSMSetDynamicCmdStrValue (page 351)

NWSMSetDynamicCmdStrValue

Changes the current values of a set command (that takes in string values) on a specified server

NetWare Server: 3.x, 4.x, 5.x, 6.x

Platform: NLM, Windows NT, Windows 95, Windows 98

Library: Cross-Platform NetWare Calls (CAL*.*)

Service: Server Management

Syntax

```
#include <nwsm.h>
or
#include <nwcalls.h>

N_EXTERN_LIBRARY NWCCODE NWSMSetDynamicCmdStrValue (
   NWCONN_HANDLE        connHandle,
   const nstr8 N_FAR   *setCommandName,
   const nstr8 N_FAR   *cmdValue);
```

Delphi Syntax

```
uses calwin32

Function NWSMSetDynamicCmdStrValue
  (connHandle : NWCONN_HANDLE;
   setCommandName : pnstr8;
   cmdValue : pnstr8
) : NWCCODE;
```

Parameters

connHandle

   (IN) Specifies the server connection handle which is being managed.

setCommandName

   (IN) Points to the parameter command name. It must be NULL terminated.

cmdValue

   (IN) Points to the new value for the set command parameter. It must be NULL terminated.

Return Values

These are common return values; see Return Values (*NDK: Connection, Message, and NCP Extensions*) for more information.

0x0000	SUCCESS

0x008C	Invalid type flag value
0x00BF	No `setCommandName` string
0x0206	Unable to set the command
0x8801	INVALID_CONNECTION
0x890A	NLM_INVALID_CONNECTION
0x89FB	ERR_NCP_NOT_SUPPORTED

Remarks

You must be logged into `connHandle`, be permanently authenticated, and have console operator rights at the minimum to call NWSMSetDynamicCmdStrValue.

The server console SET command is documented in the NetWare server utilities documentation. The SET values OFF/ON are treated as the integers 0 (zero) and 1 respectively; they are not treated as strings.

NCP Calls

0x2222 131 6 Set Command Value

See Also

NWGetServerSetCommandsInfo (page 151), NWGetServerSetCategories (page 149), NWSMSetDynamicCmdIntValue (page 349)

NWSMUnloadNLM

Unloads a selected NLM on a server

NetWare Server: 4.x, 5.x, 6.x

Platform: NLM, Windows NT, Windows 95, Windows 98

Library: Cross-Platform NetWare Calls (CAL*.*)

Service: Server Management

Syntax

```
#include <nwsm.h>
or
#include <nwcalls.h>

N_EXTERN_LIBRARY NWCCODE NWSMUnloadNLM (
   NWCONN_HANDLE         connHandle,
   const nstr8 N_FAR   *NLMName);
```

Delphi Syntax

```
uses calwin32

Function NWSMUnloadNLM
  (connHandle : NWCONN_HANDLE;
   NLMName : pnstr8
) : NWCCODE;
```

Parameters

connHandle

   (IN) Specifies the server connection handle which is being managed.

NLMName

   (IN) Points to the name of the NLM to be unloaded (NULL-terminated with a maximum length of 482 bytes).

Return Values

These are common return values; see Return Values (*NDK: Connection, Message, and NCP Extensions*) for more information.

0x0000	SUCCESS
0x009E	Bad file name or no file name given
0x0202	Unable to unload specified module
0x8801	INVALID_CONNECTION

0x890A	NLM_INVALID_CONNECTION
0x89FB	ERR_NCP_NOT_SUPPORTED
0x899E	INVALID_FILENAME

Remarks

You must be logged into `connHandle`, be permanently authenticated, and have supervisor rights to call NWSMUnloadNLM.

The `NLMName` parameter can be any string that is valid for the UNLOAD command on the console (except it does not include the actual "UNLOAD" command) and contains the NLM name.

The `NLMName` parameter has the following format:

```
NLMname{.ext}
```

NWSMUnloadNLM does not support UNC paths.

The NLM does not have to include the extensions. .NLM will be assumed if the extension is not included.

The server console UNLOAD command is documented in the NetWare server utilities documentation.

NOTE: NWSMUnloadNLM can return SUCCESS without unloading the specified NLM application if the NLM also has dependencies loaded. The return of SUCCESS signifies only that the server successfully processed the RPC.

NCP Calls

0x2222 131 2 Unload A NLM

See Also

NWSMLoadNLM (page 342)

TTS Concepts

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7

</div>

This section provides and overview of TTS services, its functions, and features.

7.1 TTS Introduction

The Transaction Tracking System™ (TTS™) software allows NetWare® servers to track transactions and ensure file integrity by backing out of or erasing interrupted or partially completed transactions. For example, the server can back out of a transaction if your application terminates unexpectedly while a transaction is in progress.

A transaction can include any series of requests that affect transactional files. TTS can monitor from 1 to 200 transactions at a time. The maximum number (50 to 200) is configurable.

TTS can track only one transaction at a time for each session. If a session sends several transactions to a server rapidly, TTS queues the transactions and services them one at a time. TTS lets you begin and end transactions, monitor TTS status, and access TTS information.

7.2 Implicit Transaction Tracking

Implicit transaction tracking requires no coding on your part. If TTS is installed and enabled on a NetWare® server, transaction tracking applies to any logical or physical record lock you place on a transactional file. If the workstation's connection is disrupted before the records are unlocked, TTS backs out of the transaction and restores the records to their original state.

For related information, see Section 7.3, "Explicit Transaction Tracking," on page 355.

7.3 Explicit Transaction Tracking

Explicit transaction tracking uses TTS. To signal an explicit transaction, bracket file update sequences with a pair of TTS functions.

- NWTTSBeginTransaction (page 369) signals the beginning of a transaction.
- NWTTSEndTransaction (page 371) signals the end of a transaction.

TTS tracks all transactional files accessed between these two functions and automatically places a physical lock on transactional files that you write to during this time. As with implicit tracking, if your connection is disrupted, TTS backs out of any modified files. You can force TTS to back out of the transaction by calling NWTTSAbortTransaction (page 367).

TTS affects only transactional files. To make a file transactional, set the file's transaction bit. This bit is a file attribute and can be modified using the File System service. (See Directory Entry Attributes in Volume Management.)

For related information, see Section 7.2, "Implicit Transaction Tracking," on page 355.

7.4 Transaction Tracking Process

A typical transaction scenario is a banking database application that writes a debit to one account, a credit to another account, and a note to a log. The dependencies among the three operations make it extremely important that they are performed as a single transaction.

If any one of the operations fails, the integrity of the other operations is undermined. TTS ensures data integrity under circumstances such as these. Below is a description of how TTS responds to a request to write to a transactional file.

1. TTS stores the new data in cache memory. The file itself remains unchanged.

2. TTS scans the target file on the server hard disk, finds the data to be changed (old data), and copies the old data to cache memory. TTS also records the name and directory path of the target file and the location and length of the old data (record) within the file. The target file on the server hard disk is still unchanged.

3. TTS writes the old data in cache memory to a transaction work file on the server hard disk. The transaction work file resides at the root level of a volume on the server. The file is flagged system and hidden. The target file on the server hard disk is still unchanged.

4. TTS finally writes the new data in cache memory to the target file on the server hard disk.

TTS repeats these steps for each write within a transaction. The transaction work file grows to accommodate the old data for each write. If the transaction is interrupted, TTS writes the contents of the transaction work file to the target file, thereby restoring the file to its pre-transaction state.

7.5 Implicit Tracking Threshold

TTS lets you read and modify the implicit tracking threshold. This is the number of logical and physical locks your application can set before implicit tracking takes effect. The default threshold is 0, meaning that whenever you place a logical or physical lock on a transactional file, the file will be tracked. A threshold of 0xFF means that implicit transactions for the associated lock type have been completed.

There are two reasons to modify the threshold value:

- If your application is performing explicit transactions but also locking records you don't want to track, you can turn off implicit transactions.

- If your application always keeps one or more records locked, raising the threshold prevents these records from being tracked.

7.6 TTS Transaction Functions

These functions perform transaction tracking.

Function	Header	Comment
NWTTSAbortTransaction	nwtts.h	Aborts all transactions, explicit or implicit. When this function returns successfully, all transactions have been successfully backed out of.
NWTTSBeginTransaction	nwtts.h	Begins an explicit transaction.

Function	Header	Comment
NWTTSEndTransaction	nwtts.h	Ends an explicit transaction and returns a transaction reference number.

7.7 TTS Status and File Control Functions

These functions check and modify the status of TTS on a NetWare® server and access the TTS transaction bit flags associated with transactional files.

Function	Header	Comment
NWDisableTTS	nwtts.h	Disables transaction tracking on a server.
NWEnableTTS	nwtts.h	Enables transaction tracking on a server.
NWTTSGetControlFlags	nwtts.h	Returns the transaction bits for files flagged as transactional.
NWTTSIsAvailable	nwtts.h	Verifies that the server supports transaction tracking.
NWTTSSetControlFlags	nwtts.h	Enables or disables automatic record locking when writing to transactional files.
NWTTSTransactionStatus	nwtts.h	Verifies whether a transaction has been written to disk.

7.8 TTS Threshold Functions

These functions read and modify the connection and process thresholds affecting implicit transaction tracking.

Function	Header	Comment
NWTTSGetConnectionThresholds	nwtts.h	Returns the number of logical and physical record locks allowed before implicit transactions begin.
NWTTSGetProcessThresholds	nwtts.h	Returns the number of explicit physical and logical record locks allowed before implicit locking begins.
NWTTSSetConnectionThresholds	nwtts.h	Informs a server of how many explicit physical and logical record locks to permit before invoking implicit transactions.
NWTTSSetProcessThresholds	nwtts.h	Sets the number of logical and physical locks to perform before implicit locking begins.

TTS Tasks

8

This section describes *a task* associated with TTS services.

8.1 Enabling TTS

When TTS is disabled, NDS operations which require modifying the database on that server are also disabled.

1 At the console prompt of the server, type ENABLE TTS.

NOTE: If TTS was disabled because volume SYS: was full, log onto the server and delete unnecessary files from volume SYS:, then type ENABLE TTS at the console.

TTS Functions

9

This documentation alphabetically lists the TTS functions and describes their purpose, syntax, parameters, and return values.

NWDisableTTS

Disables transaction tracking on a NetWare® server

Local Servers: blocking

Remote Servers: blocking

NetWare Server: 3.11, 3.12, 3.2

Platform: NLM, Windows NT, Windows 95, Windows 98

Library: Cross-Platform NetWare Calls (CAL*.*)

Service: Transaction Tracking System (TTS)

Syntax

```
#include <nwtts.h>
or
#include <nwcalls.h>

NWCCODE N_API  NWDisableTTS (
   NWCONN_HANDLE   conn);
```

Delphi Syntax

```
uses calwin32

Function NWDisableTTS
  (conn : NWCONN_HANDLE
) : NWCCODE;
```

Parameters

conn

    (IN) Specifies the NetWare server connection handle.

Return Values

These are common return values; see Return Values (*Return Values for C*) for more information.

0x0000	SUCCESSFUL
0x8801	INVALID_CONNECTION
0x890A	NLM_INVALID_CONNECTION
0x89C6	NO_CONSOLE_PRIVILEGES

Remarks

Transaction Tracking is always enabled on 4.x servers due to NDS™ requirements; therefore, enabling or disabling transaction tracking is only supported on 3.x servers.

NCP Calls

0x2222 23 207 Disable Transaction Tracking

NWEnableTTS

Enables transaction tracking on a NetWare server

Local Servers: blocking

Remote Servers: blocking

NetWare Server: 3.11, 3.12, 3.2

Platform: NLM, Windows NT, Windows 95, Windows 98

Library: Cross-Platform NetWare Calls (CAL*.*)

Service: Transaction Tracking System (TTS)

Syntax

```
#include <nwtts.h>
or
#include <nwcalls.h>

NWCCODE N_API  NWEnableTTS  (
   NWCONN_HANDLE   conn);
```

Delphi Syntax

```
uses calwin32

Function NWEnableTTS
  (conn : NWCONN_HANDLE
) : NWCCODE;
```

Parameters

conn

> (IN) Specifies the NetWare server connection handle.

Return Values

These are common return values; see Return Values (*Return Values for C*) for more information.

0x0000	SUCCESSFUL
0x8801	INVALID_CONNECTION
0x890A	NLM_INVALID_CONNECTION
0x8996	SERVER_OUT_OF_MEMORY
0x89C6	NO_CONSOLE_PRIVILEGES

Remarks

Transaction Tracking is always enabled on 4.x servers due to NDS requirements; therefore, enabling or disabling transaction tracking is only supported on 3.x servers.

NCP Calls

0x2222 23 208 Enable Transaction Tracking

NWGetTTSStats (obsolete-moved from .h file 6/99)

Was last documented in Release 15 for NetWare 2.x only.

NWTTSAbortTransaction

Aborts all transactions, explicit and implicit

Local Servers: blocking

Remote Servers: blocking

NetWare Server: 3.11, 3.12, 3.2, 4.x, 5.x, 6.x

Platform: NLM, Windows NT, Windows 95, Windows 98

Library: Cross-Platform NetWare Calls (CAL*.*)

Service: Transaction Tracking System (TTS)

Syntax

```
#include <nwtts.h>
or
#include <nwcalls.h>

NWCCODE N_API  NWTTSAbortTransaction  (
   NWCONN_HANDLE   conn);
```

Delphi Syntax

```
uses calwin32

Function NWTTSAbortTransaction
  (conn : NWCONN_HANDLE
) : NWCCODE;
```

Parameters

conn

   (IN) Specifies the NetWare server connection handle.

Return Values

These are common return values; see Return Values (*Return Values for C*) for more information.

0x0000	SUCCESSFUL
0x8801	INVALID_CONNECTION
0x890A	NLM_INVALID_CONNECTION
0x89FE	DIRECTORY_LOCKED
0x89FE	Transaction Restart
0x89FF	LOCK_ERROR

Remarks

When NWTTSAbortTransaction is complete, all transactions will have been successfully backed out.

If a transaction is aborted, all Writes made since the beginning of a transaction are cancelled, and all files are returned to the state they were in before the transaction began.

NWTTSAbortTransaction releases the following record locks:

- Physical record locks generated by the NetWare server when an application tried to write an unlocked record.
- Physical or logical locks not released because of a file Write.

0x89FE indicates more than the threshold number of logical or physical records are still locked by the application. However, the transaction is finished and any locks being held are released. When this happens, the NetWare server automatically starts a new implicit transaction.

NCP Calls

0x2222 34 3 TTS Abort Transaction

See Also

NWTTSBeginTransaction

Begins an explicit transaction

Local Servers: blocking

Remote Servers: blocking

NetWare Server: 3.11, 3.12, 3.2, 4.x, 5.x, 6.x

Platform: NLM, Windows NT, Windows 95, Windows 98

Library: Cross-Platform NetWare Calls (CAL*.*)

Service: Transaction Tracking System (TTS)

Syntax

```
#include <nwtts.h>
or
#include <nwcalls.h>

NWCCODE N_API  NWTTSBeginTransaction  (
   NWCONN_HANDLE   conn);
```

Delphi Syntax

```
uses calwin32

Function NWTTSBeginTransaction
  (conn : NWCONN_HANDLE
) : NWCCODE;
```

Parameters

conn

   (IN) Specifies the NetWare server connection handle.

Return Values

These are common return values; see Return Values (*Return Values for C*) for more information.

0x0000	Successful
0x8801	INVALID_CONNECTION
0x890A	NLM_INVALID_CONNECTION

Remarks

NWTTSBeginTransaction tracks all transactional files currently open, and those opened during the transaction.

When data is written to a transaction file during a transaction, the NetWare server automatically generates a physical record lock for the region being written. If a lock already exists, no additional lock is generated. This automatic locking can be disabled by calling NWTTSSetControlFlags.

Any closing and unlocking of transaction files is delayed until either NWTTSEndTransaction or NWTTSAbortTransaction is executed. Logical and physical records are not unlocked until the end of the transaction if file writes are performed while the lock is in force.

NCP Calls

0x2222 34 1 TTS Begin Transaction

See Also

NWTTSAbortTransaction (page 367), NWTTSEndTransaction (page 371), NWTTSSetControlFlags (page 383)

NWTTSEndTransaction

Ends an explicit transaction and returns a transaction reference number

Local Servers: blocking

Remote Servers: blocking

NetWare Server: 3.11, 3.12, 3.2, 4.x, 5.x, 6.x

Platform: NLM, Windows NT, Windows 95, Windows 98

Library: Cross-Platform NetWare Calls (CAL*.*)

Service: Transaction Tracking System (TTS)

Syntax

```
#include <nwtts.h>
or
#include <nwcalls.h>

NWCCODE N_API  NWTTSEndTransaction  (
   NWCONN_HANDLE   conn,
   pnuint32        transactionNum);
```

Delphi Syntax

```
uses calwin32

Function NWTTSEndTransaction
  (conn : NWCONN_HANDLE;
   transactionNum : pnuint32
) : NWCCODE;
```

Parameters

conn

(IN) Specifies the NetWare server connection handle.

transactionNum

(OUT) Points to the transaction reference number for the transaction being ended (optional).

Return Values

These are common return values; see Return Values (*Return Values for C*) for more information.

0x0000	Successful
0x8801	INVALID_CONNECTION
0x890A	NLM_INVALID_CONNECTION

0x89FE	Transaction Restart
0x89FF	LOCK_ERROR

Remarks

The transaction number is used to verify a successful transaction completion to disk.

The transaction is not necessarily written to disk when the reference number is returned. A client must call NWTTSTransactionStatus to verify a transaction has been written to disk. If the NetWare server fails before all updates contained within the transaction have been written to disk, the transaction is backed out when the NetWare server is rebooted.

If transaction tracking is disabled, `transactionNum` can still determine when the transaction has been completely written to disk. Since `transactionNum` is optional, substitute NULL if no return values are desired.

NWTTSEndTransaction releases all physical record locks generated by the NetWare server when a Write is made to an unlocked record. In addition, physical or logical locks that were not released due to a file Write are unlocked at this time.

0x89FE indicates more than the threshold number of logical or physical records are still locked by the application. However, the transaction is finished and any locks being held are released. In this case, the NetWare server automatically starts a new implicit transaction.

NCP Calls

 0x2222 34 2 TTS End Transaction

See Also

NWTTSAbortTransaction (page 367), NWTTSBeginTransaction (page 369), NWTTSTransactionStatus (page 387)

NWTTSGetConnectionThresholds

Returns the number of logical and physical record locks allowed before implicit transactions begin

Local Servers: blocking

Remote Servers: blocking

NetWare Server: 3.11, 3.12, 3.2, 4.x, 5.x, 6.x

Platform: NLM, Windows NT, Windows 95, Windows 98

Library: Cross-Platform NetWare Calls (CAL*.*)

Service: Transaction Tracking System (TTS)

Syntax

```
#include <nwtts.h>
or
#include <nwcalls.h>

NWCCODE N_API  NWTTSGetConnectionThresholds  (
   NWCONN_HANDLE    conn,
   pnuint8          logicalLockLevel,
   pnuint8          physicalLockLevel);
```

Delphi Syntax

```
uses calwin32

Function NWTTSGetConnectionThresholds
  (conn : NWCONN_HANDLE;
   logicalLockLevel : pnuint8;
   physicalLockLevel : pnuint8
) : NWCCODE;
```

Parameters

conn

    (IN) Specifies the NetWare server connection handle.

logicalLockLevel

    (OUT) Points to the number of logical record locks allowed before implicit transactions begin (0 to 255, optional).

physicalLockLevel

    (OUT) Points to the number of physical record locks allowed before implicit transactions begin (0 to 255, optional).

Return Values

These are common return values; see Return Values (*Return Values for C*) for more information.

0x0000	Successful
0x8801	INVALID_CONNECTION
0x890A	NLM_INVALID_CONNECTION

Remarks

Both NWTTSSetConnectionThresholds and NWGetConnectionThreshold s are useful for applications changing the implicit application thresholds that later want to restore them. For example, NWTTSGetConnectionThresholds can get the number of logical and physical locks, and NWTTSSetConnectionThresholds can perform one of the following:

- Turn off implicit transactions. (Applications using only explicit transactions, but sometimes generating unnecessary implicit transactions, need to turn off all implicit transactions.)
- Set implicit thresholds for applications always keeping one or more records locked.

The default threshold for logical and physical locks is 0. 0xFF means implicit transactions for the lock type have been completed.

Both `physicalLockLevel` and `logicalLockLevel` are optional parameters. Substitute NULL if these parameters are not to be returned. However, all parameter positions must be filled.

NCP Calls

0x2222 34 7 TTS Get Workstation Threshold

See Also

NWTTSSetConnectionThresholds (page 381)

NWTTSGetControlFlags

Returns the transaction bits for files flagged as transactional

Local Servers: blocking

Remote Servers: blocking

NetWare Server: 3.11, 3.12, 3.2, 4.x, 5.x, 6.x

Platform: NLM, Windows NT, Windows 95, Windows 98

Library: Cross-Platform NetWare Calls (CAL*.*)

Service: Transaction Tracking System (TTS)

Syntax

```
#include <nwtts.h>
or
#include <nwcalls.h>

NWCCODE N_API  NWTTSGetControlFlags  (
   NWCONN_HANDLE    conn,
   pnuint8          controlFlags);
```

Delphi Syntax

```
uses calwin32

Function NWTTSGetControlFlags
  (conn : NWCONN_HANDLE;
   controlFlags : pnuint8
) : NWCCODE;
```

Parameters

conn

   (IN) Specifies the NetWare server connection handle.

controlFlags

   (OUT) Points to Transaction Tracking Control flags.

Return Values

These are common return values; see Return Values (*Return Values for C*) for more information.

0x0000	SUCCESSFUL
0x8801	INVALID_CONNECTION
0x890A	NLM_INVALID_CONNECTION

Remarks

Transaction tracking control flags are only valid for files flagged as TTS. Bits 1 to 7 in `controlFlags` are reserved; bit 0 is defined below:

```
0x00   Automatic record locking is disabled
0x01   Automatic record locking is enabled
```

NCP Calls

0x2222 34 9 TTS Get Transaction Bits

See Also

NWTTSSetControlFlags (page 383)

NWTTSGetProcessThresholds

Returns the number of explicit physical and logical record locks allowed before implicit locking begins

Local Servers: blocking

Remote Servers: blocking

NetWare Server: 3.11, 3.12, 3.2, 4.x, 5.x, 6.x

Platform: NLM, Windows NT, Windows 95, Windows 98

Library: Cross-Platform NetWare Calls (CAL*.*)

Service: Transaction Tracking System (TTS)

Syntax

```
#include <nwtts.h>
or
#include <nwcalls.h>

NWCCODE N_API  NWTTSGetProcessThresholds  (
   NWCONN_HANDLE    conn,
   pnuint8          logicalLockLevel,
   pnuint8          physicalLockLevel);
```

Delphi Syntax

```
uses calwin32

Function NWTTSGetProcessThresholds
  (conn : NWCONN_HANDLE;
   logicalLockLevel : pnuint8;
   physicalLockLevel : pnuint8
) : NWCCODE;
```

Parameters

conn

> (IN) Specifies the NetWare server connection handle.

logicalLockLevel

> (OUT) Points to the number of explicit logical record locks allowed before implicit transactions begin (0 to 255, optional).

physicalLockLevel

> (OUT) Points to the number of explicit physical record locks allowed before implicit transactions begin (0 to 255, optional).

Return Values

These are common return values; see Return Values (*Return Values for C*) for more information.

0x0000	SUCCESSFUL
0x8801	INVALID_CONNECTION
0x890A	NLM_INVALID_CONNECTION

Remarks

NWTTSGetProcessThresholds and NWTTSSetProcessThresholds are useful for applications changing the implicit process thresholds that later want to restore them. For example, NWTTSGetProcessThresholds can query an application for the number of logical and physical record locks allowed before an implicit transaction begins, and NWTTSSetProcessThresholds can perform one of the following:

- Turn off implicit transactions. (Applications intending to use only explicit transactions, but sometimes generate unnecessary implicit transactions, need to turn off all implicit transactions.)
- Set implicit thresholds for applications always keeping one or more records locked.

The default threshold for logical and physical locks is 0. 0xFF means no implicit transactions are allowed for the lock type.

Thresholds returned by NWTTSGetProcessThresholds are valid for the requesting application only. When the application terminates, the connection thresholds are restored.

Both `physicalLockLevel` and `logicalLockLevel` are optional parameters. Substitute NULL if these parameters are not to be returned. However, all parameter positions must be filled.

NCP Calls

0x2222 34 5 TTS Get Application Threshold

See Also

NWTTSSetProcessThresholds (page 385)

NWTTSIsAvailable

Verifies the NetWare server supports transaction tracking

Local Servers: blocking

Remote Servers: blocking

NetWare Server: 3.11, 3.12, 3.2, 4.x, 5.x, 6.x

Platform: NLM, Windows NT, Windows 95, Windows 98

Library: Cross-Platform NetWare Calls (CAL*.*)

Service: Transaction Tracking System (TTS)

Syntax

```
#include <nwtts.h>
or
#include <nwcalls.h>

NWCCODE N_API  NWTTSIsAvailable  (
   NWCONN_HANDLE   conn);
```

Delphi Syntax

```
uses calwin32

Function NWTTSIsAvailable
  (conn : NWCONN_HANDLE
) : NWCCODE;
```

Parameters

conn

   (IN) Specifies the NetWare server connection handle.

Return Values

These are common return values; see Return Values (*Return Values for C*) for more information.

0x0000	Transaction Tracking is Unavailable
0x8801	INVALID_CONNECTION
0x890A	NLM_INVALID_CONNECTION
0x89FD	Transaction Tracking is Disabled
0x89FF	Transaction Tracking is Available

Remarks

0x0000 does not indicate successful completion of NWTTSIsAvailable. Instead, 0x0000 indicates TTS is unavailable. The successful completion code is 0x89FF, TTS is available.

NCP Calls

 0x2222 34 0 TTS Is Available

NWTTSSetConnectionThresholds

Sets the number of explicit physical and logical record locks to permit before invoking implicit transactions

Local Servers: blocking

Remote Servers: blocking

NetWare Server: 3.11, 3.12, 3.2, 4.x, 5.x, 6.x

Platform: NLM, Windows NT, Windows 95, Windows 98

Library: Cross-Platform NetWare Calls (CAL*.*)

Service: Transaction Tracking System (TTS)

Syntax

```
#include <nwtts.h>
or
#include <nwcalls.h>

NWCCODE N_API  NWTTSSetConnectionThresholds  (
   NWCONN_HANDLE    conn,
   nuint8           logicalLockLevel,
   nuint8           physicalLockLevel);
```

Delphi Syntax

```
uses calwin32

Function NWTTSSetConnectionThresholds
  (conn : NWCONN_HANDLE;
   logicalLockLevel : nuint8;
   physicalLockLevel : nuint8
) : NWCCODE;
```

Parameters

conn

> (IN) Specifies the NetWare server connection handle.

logicalLockLevel

> (IN) Specifies the number of logical record locks to allow before implicit transactions begin (0 to 255).

physicalLockLevel

> (IN) Specifies the number of physical record locks to allow before implicit transactions begin (0 to 255).

Return Values

These are common return values; see Return Values (*Return Values for C*) for more information.

0x0000	SUCCESSFUL
0x8801	INVALID_CONNECTION
0x890A	NLM_INVALID_CONNECTION

Remarks

The return values are in effect for all applications, not just ones calling NWTTSSetConnectionThresholds.

The default threshold for logical and physical locks is 0. 0xFF means no implicit transactions for the lock type can be performed.

NWTTSSetConnectionThresholds and NWTTSGetConnectionThresholds are useful for applications changing the implicit application thresholds that later want to restore them.

For example, NWTTSGetConnectionThresholds can obtain the current number of logical and physical locks, and NWTTSSetConnectionThresholds can perform one of the following:

- Turn off implicit transactions. (Applications using only explicit transactions, but sometimes generate unnecessary implicit transactions, need to turn off all implicit transactions.)
- Set implicit thresholds for applications always keeping one or more records locked.

NCP Calls

0x2222 34 8 TTS Set Workstation Thresholds

See Also

NWTTSGetConnectionThresholds (page 373)

NWTTSSetControlFlags

Enables or disables automatic record locking on Writes to transactional files

Local Servers: blocking

Remote Servers: blocking

NetWare Server: 3.11, 3.12, 3.2, 4.x, 5.x, 6.x

Platform: NLM, Windows NT, Windows 95, Windows 98

Library: Cross-Platform NetWare Calls (CAL*.*)

Service: Transaction Tracking System (TTS)

Syntax

```
#include <nwtts.h>
or
#include <nwcalls.h>

NWCCODE N_API  NWTTSSetControlFlags  (
   NWCONN_HANDLE    conn,
   nuint8           controlFlags);
```

Delphi Syntax

```
uses calwin32

Function NWTTSSetControlFlags
  (conn : NWCONN_HANDLE;
   controlFlags : nuint8
) : NWCCODE;
```

Parameters

conn

   (IN) Specifies the NetWare server connection handle.

controlFlags

   (IN) Specifies the Transaction Tracking control flags.

Return Values

These are common return values; see Return Values (*Return Values for C*) for more information.

0x0000	SUCCESSFUL
0x8801	INVALID_CONNECTION
0x890A	NLM_INVALID_CONNECTION

Remarks

NWTTSSetControlFlags allows a client to set the transaction bits in `controlFlag`.

Transaction tracking control flags are only valid for files flagged as transactional. Only bit 0 is used currently. Flag definitions follow:

```
0x00   Automatic record locking is disabled
0x01   Automatic record locking is enabled
```

NCP Calls

 0x2222 34 10 TTS Set Transaction Bits

NWTTSSetProcessThresholds

Sets the number of logical and physical locks to perform before implicit locking begins

Local Servers: blocking

Remote Servers: blocking

NetWare Server: 3.11, 3.12, 3.2, 4.x, 5.x, 6.x

Platform: NLM, Windows NT, Windows 95, Windows 98

Library: Cross-Platform NetWare Calls (CAL*.*)

Service: Transaction Tracking System (TTS)

Syntax

```
#include <nwtts.h>
or
#include <nwcalls.h>

NWCCODE N_API  NWTTSSetProcessThresholds  (
   NWCONN_HANDLE    conn,
   nuint8           logicalLockLevel,
   nuint8           physicalLockLevel);
```

Delphi Syntax

```
uses calwin32

Function NWTTSSetProcessThresholds
  (conn : NWCONN_HANDLE;
   logicalLockLevel : nuint8;
   physicalLockLevel : nuint8
) : NWCCODE;
```

Parameters

conn

    (IN) Specifies the NetWare server connection handle.

logicalLockLevel

    (IN) Specifies the number of logical record locks to allow before implicit transactions begin (0-255).

physicalLockLevel

    (IN) Specifies the number of physical record locks to allow before implicit transactions begin (0-255).

Return Values

These are common return values; see Return Values (*Return Values for C*) for more information.

0x0000	SUCCESSFUL
0x8801	INVALID_CONNECTION
0x890A	NLM_INVALID_CONNECTION
0x8996	SERVER_OUT_OF_MEMORY

Remarks

The thresholds set by NWTTSSetProcessThresholds are valid for the requesting application only. When the application terminates, the default workstation thresholds are restored.

NWTTSSetProcessThresholds either turns off implicit transactions or allows applications always keeping one or more records locked to work. Applications intending to use only explicit transactions, but sometimes generating unnecessary implicit transactions, can call NWTTSSetProcessThresholds to turn off all implicit transactions.

The default threshold for logical and physical locks is 0 unless the number has been changed by calling NWTTSSetConnectionThresholds. 0xFF means no implicit transactions for the lock type are performed.

NCP Calls

0x2222 34 6 TTS Set Application Thresholds

See Also

NWTTSGetProcessThresholds (page 377)

NWTTSTransactionStatus

Verifies whether a transaction has been written to disk

Local Servers: blocking

Remote Servers: blocking

NetWare Server: 3.11, 3.12, 3.2, 4.x, 5.x, 6.x

Platform: NLM, Windows NT, Windows 95, Windows 98

Library: Cross-Platform NetWare Calls (CAL*.*)

Service: Transaction Tracking System (TTS)

Syntax

```
#include <nwtts.h>
or
#include <nwcalls.h>

NWCCODE N_API NWTTSTransactionStatus (
   NWCONN_HANDLE    conn,
   nuint32          transactionNum);
```

Delphi Syntax

```
uses calwin32

Function NWTTSTransactionStatus
  (conn : NWCONN_HANDLE;
   transactionNum : nuint32
) : NWCCODE;
```

Parameters

conn

   (IN) Specifies the NetWare server connection handle.

transactionNum

   (IN) Specifies the transaction reference number (obtained from NWTTSEndTransaction).

Return Values

These are common return values; see Return Values (*Return Values for C*) for more information.

0x0000	SUCCESSFUL
0x8801	INVALID_CONNECTION
0x890A	NLM_INVALID_CONNECTION

0x89FF	Transaction not written to disk

Remarks

NWTTSTransactionStatus can be called even if NWTTSEndTransaction returns TTS_DISABLED.

Applications should not wait for transactions to be written to disk unless it is absolutely necessary. Because the NetWare server caches algorithms, it may be up to five seconds before they are actually written. Transactions are written to disk in the order in which they terminate.

NCP Calls

 0x2222 34 4 TTS Transaction Status

See Also

NWTTSEndTransaction (page 371)

Server-Based Server Environment Concepts

10

This documentation describes Server-Based Server Environment concepts, its functions, and features.

Server Environment allows you to control various server operations and gather statistics about server operation. The functions can be divided into two categories: functions related to the FCONSOLE utility, and statistical information functions.

10.1 Prerequisites

A knowledge of underlying NetWare® subsystems may be helpful or necessary to interpret information returned by many of these functions. For example, interpreting connection task information requires a general knowledge of file system record locks and semaphores.

Many of these functions return restricted information, so they require Console Operator (or, in some cases, Supervisor) rights.

10.2 Potential Uses

The statistical functions return a wide variety of information that can be used in many ways, such as performance analysis and configuration reporting NLM applications. Among other possibilities, applications could identify system overloads, hardware failures, and potential bottlenecks.

10.3 Server-Based Server Environment Functions

The functions beginning with *SS* are all new functions available for NetWare 4.x which provide statistical information. The other functions are used for controlling the server and gathering statistical information. FCONSOLE provides a good example of the kinds of information provided by these functions.

The FCONSOLE server control functions allow you to

- Enable or disable transaction tracking
- Prohibit or allow users to log in
- Set the server time and date
- Broadcast messages to a group of workstations
- Clear a connection
- Down the server.
- Check whether a connection has console operator rights

The FCONSOLE functions also return many types of information, including

- NetWare version running on a server

- The remaining disk space for an object
- Semaphore information
- File usage and task information
- Disk cache statistics
- Disk utilization information
- LAN driver information
- Information about logical and physical records

The statistical information functions return many types of information, including

- Active connections for a server
- LAN and LSL information
- CPU information
- Cache information
- IPX and SPX information
- Information about known networks and servers
- File system information
- NLM information
- Packet Burst information
- User information
- Volume information

There is some overlap in the types of information returned by the FCONSOLE functions and the newer statistical information functions. The functions with an asterisk in the following table are new in NetWare 4.x.

NOTE: To safeguard the server from unauthorized tampering, most functions in this section require Console Operator rights and some require Supervisor rights.

CheckConsolePrivileges	Determines whether the current connection has console operator rights
CheckNetWareVersion	Verifies compatibility of an application with the version of the NetWare® OS running on a server
ClearConnectionNumber	Clears a logical connection from a server
DisableFileServerLogin	Disables all logins to a server
DisableTransactionTracking	Disables transaction tracking on a server
DownFileServer	Brings the server down
EnableFileServerLogin	Enables logins to the server
EnableTransactionTracking	Enables transaction tracking on the server
GetBinderyObjectDiskSpaceLeft	Returns an objects remaining disk space

GetConnectionSemaphores*	Returns information about a connections open semaphores
GetConnectionsOpenFiles*	Returns information about a connections open files
GetConnectionsTaskInformation*	Returns information about a connections active tasks
GetConnectionsUsageStats*	Returns information about a connections usage
GetConnectionsUsingFile*	Returns information about connections using a given file
GetDiskCacheStats*	Returns information about disk caching on a server
GetDiskChannelStats*	Returns information about a servers disk channels
GetDriveMappingTable*	Returns information about drive mappings for a server
GetFileServerDateAndTime	Returns the date and time of the server
GetFileServerDescriptionStrings	Returns the name of the company that distributed this copy of NetWare
GetFileServerLANIOStats*	Returns information about packets sent and received by a server
GetFileServerLoginStatus	Determines whether logins are disabled or enabled on a server
GetFileServerMiscInformation*	Returns bindery and memory statistics for a server
GetFileServerName	Returns the name of a server
GetFileSystemStats*	Returns file system statistics for a server
GetLanDriverConfigInfo*	Returns configuration information for the LAN drivers installed on a server
GetLogicalRecordInformation*	Returns information about a logical record
GetLogicalRecordsByConnection*	Returns the logical records that a connection has logged with a server
GetPathFromDirectoryEntry*	Accesses a file path listed in a servers directory entry table (DET)
GetPhysicalDiskStats*	Returns information about a physical disk
GetPhysicalRecordLocksByFile*	Returns physical records that are locked in a file
GetPhysRecLockByConnectAndFile*	Returns a connections physical record locks within a file
GetSemaphoreInformation*	Returns information about a semaphore
GetServerInformation	Returns information about a server

SendConsoleBroadcast	Sends a message to a list of connections
SetFileServerDateAndTime	Sets the date and time of the server
SSGetActiveConnListByType*	Returns a list of active connections
SSGetActiveLANBoardList*	Returns information about the active LAN boards on a server
SSGetActiveProtocolStacks*	Returns protocol information for a server
SSGetCacheInfo*	Returns information about a servers cache buffers
SSGetCPUInfo*	Returns information about a servers CPU
SSGetDirCacheInfo*	Returns information about directory caching on a server
SSGetFileServerInfo*	Returns information about a server
SSGetFileSystemInfo*	Returns information about a servers file system
SSGetGarbageCollectionInfo*	Returns information about garbage collection on a server
SSGetIPXSPXInfo*	Returns information about IPX™/SPX™ use on a server
SSGetKnownNetworksInfo*	Returns information about the networks known to a server
SSGetKnownServersInfo*	Returns information about the servers known to a given server
SSGetLANCommonCounters*	Returns LAN common counters
SSGetLANConfiguration*	Returns information about LAN drivers on a server
SSGetLANCustomCounters*	Returns custom counters defined for a LAN driver
SSGetLoadedMediaNumberList*	Returns a list of media loaded on a server
SSGetLSLInfo*	Returns information about an LSL™ board
SSGetLSLLogicalBoardStats*	Returns information about LSL logical boards
SSGetMediaManagerObjChildList*	Returns a list of child objects for a given media manager object
SSGetMediaManagerObjInfo*	Returns media manager information
SSGetMediaManagerObjList*	Returns a list of media manager objects
SSGetMediaNameByNumber*	Returns a media name for a given media number
SSGetNetRouterInfo*	Returns information about network routing on a server
SSGetNetworkRoutersInfo*	Returns information about the routers on a network

SSGetNLMInfo*	Returns information about an NLM™ running on a server
SSGetNLMLoadedList*	Returns a list of NLM applications loaded on a server
SSGetNLMResourceTagList*	Returns information about resources used by NLM applications on a server
SSGetOSVersionInfo*	Returns information about the OS version running on a server
SSGetPacketBurstInfo*	Returns Packet Burst™ information for a server
SSGetProtocolConfiguration*	Returns configuration information about the protocols on a server
SSGetProtocolCustomInfo*	Returns custom information about a protocol stack
SSGetProtocolNumbersByLANBoard*	Returns a list of protocols for a given LAN board
SSGetProtocolNumbersByMedia*	Returns a list of protocols for a given media
SSGetProtocolStatistics*	Returns protocol statistics for a server
SSGetRouterAndSAPInfo*	Returns router and SAP information for a server
SSGetServerInfo*	Returns address and routing information for a server
SSGetServerSourcesInfo*	Returns server addresses known to a server with a given name
SSGetUserInfo*	Returns user information for a given connection
SSGetVolumeSegmentList*	Returns a list of volume segments for a given volume on a server
SSGetVolumeSwitchInfo*	Returns counts for volume access functions

Server-Based Server Environment Functions

<div style="text-align: right">11</div>

This documentation alphabetically lists the server-based server environment functions and describes their purpose, syntax, parameters, and return values.

11.1 A*-GetD* Functions

Click on any function name in the table of contents to view the purpose, syntax, parameters, and return values for that function.

CheckConsolePrivileges

Determines whether the object on the current connection is a console operator (For cross-platform functionality, see Developing NLMs with Cross-Platform Functions (*NDK: NLM Development Concepts, Tools, and Functions*) and call NWCheckConsolePrivileges (page 32))

Local Servers: nonblocking

Remote Servers: blocking

NetWare Server: 3.x, 4.x, 5.x, 6.x

Platform: NLM

Service: Server-Based Server Environment

Syntax

```
#include <nlm\nit\nwenvrn.h>

int CheckConsolePrivileges (void);
```

Return Values

Decimal	Hex	Constant
0	(0x00)	ESUCCESS
198	(0xC6)	ERR_NO_CONSOLE_RIGHTS

Remarks

This function determines whether the object on the current connection has console operator rights. If the function returns 0, the object has console operator rights.

See Also

Bindery Concepts

CheckConsolePrivileges Example

```
#include <stdio.h>
#include <nlm\nit\nwenvrn.h>

main()
{
   int   ccode;
   printf ("\n\n");
   ccode = CheckConsolePrivileges ();
   if (ccode == 0)
      printf ("You HAVE console Operator rights.\n");
```

```
   else
      if (ccode == 198)
      printf ("You DO NOT have console Operator rights.\n");
}
```

CheckNetWareVersion

Verifies compatibility between an application and the version of NetWare® running on the server (For cross-platform functionality, see Developing NLMs with Cross-Platform Functions (*NDK: NLM Development Concepts, Tools, and Functions*) and call NWCCGetConnInfo)

Local Servers: nonblocking

Remote Servers: blocking

NetWare Server: 3.x, 4.x, 5.x, 6.x

Platform: NLM

Service: Server-Based Server Environment

Syntax

```
#include <nlm\nit\nwenvrn.h>

int CheckNetWareVersion (
   WORD   majorVersion,
   WORD   minorVersion,
   WORD   revisionNumber,
   WORD   minimumSFTlevel,
   WORD   minimumTTSlevel);
```

Parameters

majorVersion

   (IN) Specifies the minimum major version number that is compatible.

minorVersion

   (IN) Specifies the minimum minor version number that is compatible.

revisionNumber

   (IN) Specifies the minimum revision number that is compatible.

minimumSFTlevel

   (IN) Specifies the minimum System Fault Tolerant™ (SFT™) level that is compatible.

minimumTTSlevel

   (IN) Specifies the minimum Transaction Tracking System™ (TTS™) level that is compatible.

Return Values

Decimal	Hex	Constant
0	(0x00)	COMPATIBLE
1	(0x01)	VERSION_NUMBER_TOO_LOW

Decimal	Hex	Constant
2	(0x02)	SFT_LEVEL_TOO_LOW
		The version number is compatible, but the SFT level is too low.
3	(0x03)	TTS_LEVEL_TOO_LOW
		The version number is compatible, but the TTS level is too low.

Remarks

Versions of NetWare are identified by major version number, minor version number, and (if applicable) revision number. The revision number is displayed as a letter (0=a, 1=b, and so on) to the user. For example, if a version number were 2.10a, 2 would be the major version number, 10 would be the minor version number, and 0 would be the revision number.

CheckNetWareVersion Example

```
#include <stdio.h>
#include <nlm\nit\nwenvrn.h>

main()
{
   int    i;
   WORD   mv, msv, mr, msft, mtts;
   printf("min verSion, min subversion, min rev, min SFT, min TTS\n");
   scanf ("%d, %d, %d, %d, %d", &mv, &msv, &mr, &msft, &mtts);
   i = CheckNetWareVersion (mv, msv, mr, msft, mtts);
   printf ("return is %d\n",i);
}
```

ClearConnectionNumber

Clears a logical connection from the server (For cross-platform functionality, see Developing NLMs with Cross-Platform Functions (*NDK: NLM Development Concepts, Tools, and Functions*) and call NWClearConnectionNumber)

Local Servers: blocking

Remote Servers: blocking

NetWare Server: 3.x, 4.x, 5.x, 6.x

Platform: NLM

Service: Server-Based Server Environment

Syntax

```
#include <nlm\nit\nwenvrn.h>

int ClearConnectionNumber (
   WORD   connectionNumber);
```

Parameters

connectionNumber

(IN) Contains the identification number that the server assigns to a requesting workstation when the workstation attaches to the server.

Return Values

Decimal	Hex	Constant
0	(0x00)	ESUCCESS
198	(0xC6)	ERR_NO_CONSOLE_RIGHTS

Remarks

The first time a workstation attaches to a server, the server assigns it the first unused connection number in the File Server Connection Table. When a workstation detaches from a server, the server marks its connection number unused but reserves it in anticipation of reattachment. A reserved logical connection number is not reassigned to another workstation until it is the first unused connection number and the attaching workstation does not have a connection number reserved.

The server has room for 250 logical connections. The File Server Connection Table maintains the addresses of the workstations attached to the server.

This function blocks when successful.

This function closes a connection's open files and releases a connection's file locks. On a TTS server, this function causes a connection's transactions to be aborted.

When a requesting workstation clears its own connection, it can no longer communicate with the server.

The requesting workstation must have security equivalence to Supervisor rights.

ClearConnectionNumber Example

```c
#include <stdio.h>
#include <nlm\nit\nwenvrn.h>

main()
{
   int    ccode;
   WORD   connectionNumber;
   printf ("\n\n");
   printf ("Enter connection number to be cleared:  ");
   scanf ("%u", &connectionNumber);
   ccode = ClearConnectionNumber (connectionNumber);
   if (ccode == 198)
      printf ("\n\nNO CONSOLE RIGHTS\n");
   else if (ccode == 0)
      printf ("\n\nSUCCESSFULLY cleared connection number. %u\n",
              connectionNumber);
   else
      printf ("\nccode = %d\n", ccode);
}
```

DisableFileServerLogin

Disables all logins to a server (For cross-platform functionality, see Developing NLMs with Cross-Platform Functions (*NDK: NLM Development Concepts, Tools, and Functions*) and call NWDisableFileServerLogin (page 35))

Local Servers: blocking

Remote Servers: blocking

NetWare Server: 3.x, 4.x, 5.x, 6.x

Platform: NLM

Service: Server-Based Server Environment

Syntax

```
#include <nlm\nit\nwenvrn.h>

int DisableFileServerLogin (void);
```

Return Values

Decimal	Hex	Constant
0	(0x00)	ESUCCESS
198	(0xC6)	ERR_NO_CONSOLE_RIGHTS

Remarks

The DisableFileServerLogin function allows a console operator to restrict new accesses to the server during a crucial period of time such as before shutting down the server. (See also: DISABLE LOGIN console command.) If the workstation from which this call is made loses its connection to the server and no other logged objects have console Operator rights, logins can be reenabled by downing the server and rebooting, or by entering the ENABLE LOGIN command at the server console. The requesting workstation must have console Operator rights.

See Also

EnableFileServerLogin (page 408), GetFileServerLoginStatus (page 442)

DisableFileServerLogin Example

```
#include <stdio.h>
#include <nlm\nit\nwenvrn.h>

main()
{
    int   ccode;
```

```
        char   serverName[48];
        WORD   connID;
        printf ("\n\n");
        ccode = DisableFileServerLogin ();
        if (ccode == 198)
            printf ("Console Operator rights required for this
            utility\n");
        else if (ccode == 0)
        {
            connID = GetDefaultConnectionID ();
            GetFileServerName (connID, serverName);
            printf ("SUCCESSFUL\n\n");
            printf ("Disabled all new accesses to %s\n", serverName);
        }
        else
            printf ("Completion Code  =   %d\n", ccode);
    }
```

DisableTransactionTracking

Disables transaction tracking on the server (For cross-platform functionality, see Developing NLMs with Cross-Platform Functions (*NDK: NLM Development Concepts, Tools, and Functions*) and call NWDisableTTS (page 362))

Local Servers: blocking

Remote Servers: blocking

NetWare Server: 3.x

Platform: NLM

Service: Server-Based Server Environment

Syntax

```
#include <nlm\nit\nwenvrn.h>

int DisableTransactionTracking (void);
```

Return Values

Decimal	Hex	Constant
0	(0x00)	ESUCCESS
198	(0xC6)	ERR_NO_CONSOLE_RIGHTS

Remarks

DisableTransactionTracking is usually used to disable transaction tracking temporarily. This function has no effect if TTS is not installed on the server.

Transaction tracking is also disabled by the server when the transaction volume is full.

The requesting workstation must have console Operator rights. (See also: DISABLE TTS console command.)

See Also

EnableTransactionTracking (page 410)

DisableTransactionTracking Example

```
#include <stdio.h>
#include <nlm\nit\nwenvrn.h>

main()
{
   int ccode;
```

```
   ccode = DisableTransactionTracking ();
   if (ccode == 0)
      printf ("Successfully disabled TRANSACTION TRACKING...\n");
   else
      printf ("ccode = %d\n", ccode);
}
```

DownFileServer

Brings the server down (For cross-platform functionality, see Developing NLMs with Cross-Platform Functions (*NDK: NLM Development Concepts, Tools, and Functions*) and call NWDownFileServer (page 37))

Local Servers: blocking

Remote Servers: blocking

NetWare Server: 3.x, 4.x, 5.x, 6.x

Platform: NLM

Service: Server-Based Server Environment

Syntax

```
#include <nlm\nit\nwenvrn.h>

int DownFileServer (
   int    forceFlag);
```

Parameters

forceFlag

> (IN) Indicates whether the server should be forced down even if files are open (0 = Server does not go down if there are open files).

Return Values

Decimal	Hex	Constant
0	(0x00)	ESUCCESS
198	(0xC6)	ERR_NO_CONSOLE_RIGHTS
255	(0xFF)	ERR_OPEN_FILES

Remarks

The requesting workstation must have security equivalence to Supervisor rights.

DownFileServer Example

```
#include <stdio.h>
#include <stdlib.h>
#include <ctype.h>
#include <nwconio.h>
#include <nlm\nit\nwenvrn.h>
```

```c
main()
{
   int   ccode;
   int   forceFlag;
   char  ans;
   printf ("\n\n");
   printf ("Down the server while files are open??\n");
   printf ("Y/N: ");
   ans = (char)getch();
   ans = toupper (ans);
   if (ans == 'Y')
      forceFlag = 1;
   if (ans == 'N')
      forceFlag = 0;
   else
   {
      printf ("INVALID CHOICE");
      exit (-1);
   }
   ccode = DownFileServer (forceFlag);
   switch (ccode)
   {
      case 0:
         printf ("SUCCESSFULLY downed the server...");
         break;

      case 198:
         printf ("WARNING!      WARNING!      WARNING!\n\n");
         printf("Console Operator rights required for this
                  utility\n");
         break;

      case 255:
         printf ("There are open files on the server!\n");
         break;

      default:
         printf ("Error %d in DownFileServer\n", ccode);
   }
}
```

EnableFileServerLogin

Enables logins to the server (For cross-platform functionality, see Developing NLMs with Cross-Platform Functions (*NDK: NLM Development Concepts, Tools, and Functions*) and call NWEnableFileServerLogin (page 39))

Local Servers: blocking

Remote Servers: blocking

NetWare Server: 3.x, 4.x, 5.x, 6.x

Platform: NLM

Service: Server-Based Server Environment

Syntax

```
#include <nlm\nit\nwenvrn.h>

int EnableFileServerLogin (void);
```

Return Values

Decimal	Hex	Constant
0	(0x00)	ESUCCESS
198	(0xC6)	ERR_NO_CONSOLE_RIGHTS

Remarks

Server logins are disabled to restrict new accesses to a server during a crucial period of time (such as just before a server is shut down).

The requesting workstation must have console Operator rights. (See also: ENABLE LOGIN console command.)

See Also

EnableFileServerLogin Example

```
#include <stdio.h>
#include <nlm\nit\nwenvrn.h>

main()
{
   int    ccode;
   char   serverName[48];
```

```c
    WORD   connID;
    printf ("\n\n");
    ccode = EnableFileServerLogin ();
    if (ccode == 198)
       printf("Console Operator rights required for utility. \n");
    else
       if (ccode == 0)
       {
          connID = GetDefaultConnectionID ();
          GetFileServerName (connID, serverName);
          printf ("SUCCESSFUL\n\n");
          printf ("Enabled logins to %s\n", serverName);
       }
    else
    printf ("Completion Code  =   %d\n", ccode);
}
```

EnableTransactionTracking

Enables transaction tracking on the server (For cross-platform functionality, see Developing NLMs with Cross-Platform Functions (*NDK: NLM Development Concepts, Tools, and Functions*) and call NWEnableTTS (page 364))

Local Servers: blocking

Remote Servers: blocking

NetWare Server: 3.x

Platform: NLM

Service: Server-Based Server Environment

Syntax

```
#include <nlm\nit\nwenvrn.h>

int EnableTransactionTracking (void);
```

Return Values

Decimal	Hex	Constant
0	(0x00)	ESUCCESS
198	(0xC6)	ERR_NO_CONSOLE_RIGHTS

Remarks

Transaction tracking might have been disabled explicitly calling DisableTransactionTracking or automatically by the server because the transaction volume is full. After freeing space on the transaction volume by deleting unneeded files, the operator can use this function to enable transaction tracking.

This function has no effect if TTS is not installed on the server.

The requesting workstation must have console Operator rights. (See also: ENABLE TTS console command.)

See Also

DisableTransactionTracking (page 404)

EnableTransactionTracking Example

```
#include <stdio.h>
#include <nlm\nit\nwenvrn.h>
```

```
main()
{
   int   ccode;
   printf ("\n\n");
   ccode = EnableTransactionTracking ();
   if (ccode == 0)
      printf ("SUCCESSFULLY enabled TRANSACTION TRACKING.\n");
   else
      printf ("ccode = %d\n", ccode);
}
```

GetBinderyObjectDiskSpaceLeft

Returns an object's remaining disk space (For cross-platform functionality, see Developing NLMs with Cross-Platform Functions (*NDK: NLM Development Concepts, Tools, and Functions*) and call NWGetObjectDiskSpaceLeft)

Local Servers: nonblocking

Remote Servers: blocking

NetWare Server: 3.x, 4.x, 5.x, 6.x

Platform: NLM

Service: Server-Based Server Environment

Syntax

```
#include <nlm\nit\nwenvrn.h>

int GetBinderyObjectDiskSpaceLeft (
   WORD   fileServerID,
   long   objectID,
   long   *systemElapsedTime,
   long   *unusedDiskBlocks,
   BYTE   *restrictionEnforced);
```

Parameters

fileServerID

   (IN) Specifies the connection ID of the server for which to get information.

objectID

   (IN) Specifies the ID of the object for which to return information.

systemElapsedTime

   (OUT) Specifies the time elapsed since the server was brought up.

unusedDiskBlocks

   (OUT) Specifies the number of 4K blocks the object has left.

restrictionEnforced

   (OUT) Indicates the limitations placed on disk resources; 0 indicates maximum disk space is enforced for the object by the server.

Return Values

Decimal	Hex	Constant
0	(0x00)	ESUCCESS

Decimal	Hex	Constant
198	(0XC6)	ERR_NO_CONSOLE_RIGHTS

Remarks

This function allows the requesting workstation to get remaining disk space for its own logged object.

The `objectID` parameter is a 4-byte identification number assigned to an object by the server. It uniquely identifies the object within the NetWare Directory.

The `systemElapsedTime` parameter indicates the time that has elapsed since the server was brought up. It is returned in units of approximately 1/18th of a second. This field can be used to determine the amount of time that has elapsed between consecutive calls. When this field reaches 0xFFFFFFFF, it wraps back to zero.

The `unusedDiskBlocks` parameter indicates the number of remaining 4K blocks the object can allocate. The `unusedDiskBlocks` available to a user are not related to how much free disk space is actually available.

The `restrictionsEnforced` parameter indicates the limitations placed on disk resources (0x00 = enforced, 0xFF = not enforced). For disk resource limitation to be active, it must be selected as an option during network installation. If it is not selected as an option, it is not enforced by the server.

Console Operator rights are required to get remaining disk space for other objects.

See Also

GetDefaultFileServerID

GetBinderyObjectDiskSpaceLeft Example

```
#include <stdio.h>
#include <nlm\nit\nwenvrn.h>

main()
{
   int    ccode, restrictionEnforced;
   int    days, hours, minutes, seconds;
   char   serverName[48];
   WORD   fileServerID, oldConnID;
   long   objectID, systemElapsedTime, unusedDiskBlocks;
   float  tmpTime;
   printf ("Enter server name:  ");
   scanf ("%s", serverName);
   GetfileServerID (serverName, &fileServerID);
   oldConnID = GetPreferredConnectionID ();
   SetPreferredConnectionID (fileServerID);

/*- Replace "JDOE" with the user name you want -*/
   GetBinderyObjectID ("JDOE", OT_USER, &objectID);
```

```
ccode = GetBinderyObjectDiskSpaceLeft(fileServerID, objectID,
   &systemElapsedTime,  &unusedDiskBlocks, &restrictionEnforced);
if (ccode == 0)
{
   tmpTime =  ((((   ((float)(systemElapsedTime))/18)/60)/60)/24);
   days = (int)tmpTime;
   tmpTime = (tmpTime - days) * 24;
   hours = (int)tmpTime;
   tmpTime = (tmpTime - hours) * 60;
   minutes = (int)tmpTime;
   tmpTime = (tmpTime - minutes) * 60;
   seconds = (int)tmpTime;
   printf ("\n\n\n");
   printf ("Connection ID        %u\n", fileServerID);
   printf ("Object ID            %08lX\n", objectID);
   printf ("Elapsed Time         %d DAYS %d HOURS ", days, hours);
   printf ("%d MINUTES %d SECONDS\n", minutes, seconds);
   printf ("Unused Disk Blocks        %08lX\n", unusedDiskBlocks);
   printf ("Restriction Enforced??    %d\n", restrictionEnforced);
}
else
   printf ("Error %d in GetBinderyObjectDiskSpaceLeft\n", ccode);
SetPreferredConnectionID (oldConnID);
}
```

GetConnectionSemaphores

Returns information about a connection's open semaphores (For cross-platform functionality, see Developing NLMs with Cross-Platform Functions (NLM Development Concepts, Tools, and Functions) and call NWScanSemaphoresByConn in Single and Intra-File Management)

Local Servers: blocking

Remote Servers: blocking

NetWare Server: 3.x, 4.x, 5.x, 6.x

Platform: NLM

Service: Server-Based Server Environment

Syntax

```
#include <nlm\nit\nwenvrn1.h>

T_RC GetConnectionSemaphores (
   WORD              connectionNumber,
   int              *lastRecord,
   int              *lastTask,
   int               structSize,
   CONN_SEMAPHORE   *connectionSemaphore,
   void             *buffer,
   int               bufferSize);
```

Parameters

connectionNumber

(IN) Specifies the connection number to return information for.

lastRecord

(IN/OUT) Points to the next major record (set to 0 for the first call).

lastTask

(IN/OUT) Points to the task number within the logical connection that has the semaphore open (set to 0 for the first call).

structSize

(IN) Specifies the size of the CONN_SEMAPHORE structure.

connectionSemaphore

(OUT) Points to a structure that contains information about the connection's open semaphores.

buffer

(IN/OUT) Points to a buffer that is used during processing. If this function is called iteratively, `buffer` should be reused.

bufferSize

(IN) Specifies the size of `buffer`. The buffer should be at least ENVSERV_BUFFER1_SIZE bytes.

Return Values

ESUCCESS or NetWare errors.

Remarks

This function returns information about the open semaphores for the connection specified by `connectionNumber`. The requesting connection must have console operator rights.

To call this function iteratively, an application must set `lastRecord` and `lastTask` to zero on the first call. The function changes `lastRecord` to point to the next major record, if any. If `lastRecord` and `lastTask` are returned as zero, there is no more information to receive.

The `structSize` parameter is the size of CONN_SEMAPHORE, which should be at least the size of CONN_SEMAPHORE_386 plus two bytes (for the WORD, `unionType`). The connection type (386 server) can be determined by calling CheckNetWareVersion.

GetConnectionSemaphores returns different information depending on whether the connection is to a NetWare 3.x (or above) server. The CONN_SEMAPHORE structure is defined in NWENVRN1.H as follows:

```
typedef struct CONN_SEMAPHORE
{
   WORD    unionType;
   union
   {
      CONN_SEMAPHORE_386 con386;
   }u;
}CONN_SEMAPHORE;
```

The `unionType` field indicates the type of information (386) that is returned. If the connection is to a NetWare 3.x (or above) server, `unionType` is ENVSERV_CONN_TYPE_386 and a CONN_SEMAPHORE_386 structure is returned. Both structures are defined in NWENVRN1.H as follows:

```
typedef struct CONN_SEMAPHORE_386
{
   WORD    openCount;
   WORD    semahoreValue;
   WORD    taskNumber;
   BYTE    nameLength;
   BYTE    semaphoreName[255];
} CONN_SEMAPHORE_386;
```

The first `structSize` bytes are copied into the structure.

The `openCount` field contains the number of logical connections that have this semaphore open.

The `semaphoreValue` field contains the current value of the semaphore. A negative value is usually interpreted as the number of processes waiting for the service represented by the semaphore.

The `taskNumber` field contains the task number within the logical connection that has the semaphore open.

The `semaphoreName` field contains a length-preceded string representing the semaphore name.

GetConnectionsOpenFiles

Returns information about the files that a connection has open (For cross-platform functionality, see Developing NLMs with Cross-Platform Functions (NLM Development Concepts, Tools, and Functions) and call NWScanOpenFilesByConn2)

Local Servers: blocking

Remote Servers: blocking

NetWare Server: 3.x, 4.x, 5.x, 6.x

Platform: NLM

Service: Server-Based Server Environment

Syntax

```
#include <nlm\nit\nwenvrn1.h>

T_RC GetConnectionsOpenFiles (
   WORD              connectionNumber,
   int              *lastRecord,
   int              *lastTask,
   int               structSize,
   CONN_OPEN_FILES  *openFiles,
   void             *buffer,
   int               bufferSize);
```

Parameters

connectionNumber

(IN) Specifies the connection number to return information for.

lastRecord

(IN/OUT) The function sets this parameter to point to the next major record (must be set to 0 for the first call).

lastTask

(IN/OUT) The function sets this parameter to point to the task number within the logical connection that has the semaphore open (must be set to 0 for the first call).

structSize

(IN) Specifies the size of the CONN_OPEN_FILES structure.

openFiles

(OUT) Points to a structure that contains information about files that the connection has open.

buffer

(IN/OUT) Points to a buffer that is used during processing. If this function is called iteratively, `buffer` should be reused.

bufferSize

> (IN) Specifies the size of `buffer`. The buffer should be at least ENVSERV_BUFFER1_SIZE bytes.

Return Values

ESUCCESS or NetWare errors.

Remarks

This function returns information about the open files of the connection specified by `connectionNumber`. The requesting connection must have console operator rights.

To call this function iteratively, an application must set `lastRecord` and `lastTask` to zero on the first call. The function changes `lastRecord` to point to the next major record, if any. If `lastRecord` and `lastTask` are returned as zero, there is no more information to receive.

The `structSize` parameter is the size of CONN_OPEN_FILES, which should be at least the size of CONN_OPEN_FILES_386 plus two bytes (for the WORD, `unionType`). The connection type (386 server) can be determined by calling CheckNetWareVersion.

GetConnectionsOpenFiles returns different information depending on whether the connection is to a NetWare 3.x (or above) server. The CONN_OPEN_FILES structure is defined in NWENVRN1.H as follows:

```
typedef struct CONN_OPEN_FILES
{
   WORD   unionType;
   union
   {
      CONN_OPEN_FILES_386 con386;
   }u;
} CONN_OPEN_FILES;
```

The `unionType` field indicates the type of information (386) that is returned. If the connection is to a NetWare 3.x (or above) server, `unionType` is ENVSERV_CONN_TYPE_386 and a CONN_OPEN_FILES_386 structure is returned. This structure is defined in NWENVRN1.H as follows:

```
typedef struct CONN_OPEN_FILES_386
{
   WORD   taskNumber;
   BYTE   lockType;
   BYTE   accessControl;
   BYTE   lockFlag;
   BYTE   volumeNumber;
   LONG   parentDirEntry;
   LONG   dirEntry;
   BYTE   forkCount;
   BYTE   nameSpace;
   BYTE   nameLength;
   BYTE   fileName[256];
}CONN_OPEN_FILES_386;
```

The first `structSize` bytes are copied to the structure.

The `taskNumber` field indicates the task number that has the file open.

The `lockType` field contains bit flags indicating the type of file lock as follows:

0 Locked
1 Open Shareable
2 Logged
3 Open Normal
6 TTS Holding Lock
7 Transaction Flag Set For This File

The `accessControl` field contains bit flags indicating the connection's access rights for the file as follows:

0 Open for read by this connection
1 Open for write by this connection
2 Deny read requests by other connections
3 Deny write requests by other connections
4 File detached
5 TTS holding detach
6 TTS holding open

The `lockFlag` field contains a flag indicating the type of lock on the file as follows:

Decimal	Hex	Description
0	0x00	Not locked
254	0xFE	Locked by a file lock
255	0xFF	Locked by Begin Share File Set

The `volumeNumber` field identifies the file's volume in a Volume Table on the server. The Volume Table contains information about each volume on the server.

The `dirEntry` field indicates the file path that is relative to this directory. This value is not a directory handle.

The `fileName` field contains an ASCII string representing the file's name.

CONN_OPEN_FILES_386 contains an additional four fields.

The `parentDirEntry` field contains the file path relative to the parent directory.

The `forkCount` field contains the index assigned (by Novell®) to the non-primary data stream associated with the file (for example, the resource fork of a Macintosh file).

The `nameSpace` field contains a number indicating the name space of the file. The name spaces currently available are:

0	DOS

1	MACINTOSH
2	NFS
3	FTAM
4	OS2
5	NT

The `nameLength` field contains the length of `fileName`.

The `fileName` field contains the file name.

GetConnectionsTaskInformation

Returns information about a connection's active tasks (For cross-platform functionality, see Developing NLMs with Cross-Platform Functions (*NDK: NLM Development Concepts, Tools, and Functions*) and call NWGetTaskInformationByConn)

Local Servers: blocking

Remote Servers: blocking

NetWare Server: 3.x, 4.x, 5.x, 6.x

Platform: NLM

Service: Server-Based Server Environment

Synta

```
#include <nlm\nit\nwenvrn1.h>

T_RC GetConnectionsTaskInformation (
   WORD     connectionNumber,
   void   **connectionTaskInfo,
   void    *buffer,
   int      bufferSize);
```

Parameters

connectionNumber

> (IN) Specifies the connection number to return information for.

connectionTaskInfo

> (OUT) Points to a structure containing task information for the connection.

buffer

> (IN/OUT) Points to a buffer that receives CONN_SEMAPHORE_386.

bufferSize

> (IN) Specifies the size of buffer. The buffer should be at least ENVSERV_BUFFER1_SIZE bytes.

Return Values

ESUCCESS or NetWare errors.

Remarks

This function returns information about the active tasks for the connection identified by connectionNumber.

The connectionTaskInfo parameter receives a pointer to one or more structures. The structure(s) is CONN_TASK_INFO_386 depending on whether the connection is to a 3.x (or above)

server. If the structure is CONN_TASK_INFO_386, its `unionType` field contains ENVSERV_CONN_TYPE_386. These structures are defined in NWENVRN1.H as follows:

```
typedef struct CONN_TASK_INFO_386
{
   WORD   unionType;
   BYTE   lockStatus;
   union
   {
      struct
      {
         WORD   taskNumber;
         LONG   beginAddress;
         LONG   endAddress;
         WORD   volumeNumber;
         LONG   parentID;
         LONG   directoryEntry;
         BYTE   forkCount;
         BYTE   nameSpace;
         BYTE   nameLength;
         BYTE   name;
      }LockStatus1;
      struct
      {
         WORD   taskNumber;
         WORD   volumeNumber;
         LONG   parentID;
         LONG   directoryEntry;
         BYTE   forkCount;
         BYTE   nameSpace;
         BYTE   nameLength;
         BYTE   name;
      }LockStatus2;
      struct
      {
         WORD   taskNumber;
         BYTE   nameLength;
         BYTE   name;
      }LockStatus3Or4;
   }waitRecord;
}CONN_TASK_INFO_386;
```

The `lockStatus` field receives one of the following values:

0	Normal (connection free to run)
1	Connection waiting on physical record lock
2	Connection waiting on file lock
3	Connection waiting on logical record lock
4	Connection waiting on semaphore

This field indicates which of the following structures (LockStatus1, LockStatus2, or LockStatus3Or4) is filled out. If `lockStatus` is 0, none of these structures is filled out.

The `taskNumber`, `nameLength`, and `name` fields are returned for all lock status types (except 0).

The `taskNumber` field contains the task number.

The `nameLength` field contains length of `name`.

The `name` field contains the name of the file that is locked.

LockStatus1 and LockStatus2 also contain `volumeNumber` and `directoryEntry` fields.

The `volumeNumber` field contains the volume number of the volume containing the file.

The `directoryEntry` field contains the directory entry of the file.

For the CONN_TASK_INFO_386 structure, the LockStatus1 and LockStatus2 structures also contain `parentID`, `forkCount`, and `nameSpace` fields.

The `parentID` field contains the directory entry for the parent directory.

The `forkCount` field contains the index assigned (by Novell) to the non-primary data stream associated with the file (for example, the resource fork of a Macintosh file).

The `nameSpace` field contains a number indicating the name space of the file. The five name spaces that are currently available are:

0	DOS
1	MACINTOSH
2	NFS
3	FTAM
4	OS2
5	NT

The LockStatus1 structure also contains `beginAddress` and `endAddress` fields, which contain the starting address and the ending address of the locked region in the file, respectively.

Directly following the waitRecord is a byte indicating the number of active tasks for the connection. For each active task a structure follows. This structure is CONN_TASK_PAIRS_386 (for a connection to a NetWare 3.x or above server). This structure is defined in NWENVRN1.H as follows:

```
typedef struct CONN_TASK_PAIRS_386
{
   WORD    task;
   BYTE    taskStatus;
}CONN_TASK_PAIRS_386;
```

The `task` field contains the task number.

The `taskStatus` field contains the state of `task`:

Decimal	Hex	State and Description
1	0x01	TState_TTSEXPLICIT: Indicates a TTS explicit transaction is in progress.
2	0x02	TState_TTSIMPLICIT: Indicates a TTS implicit transaction is in progress.
4	0x04	TState_FileSetLock: Indicates a Shared file set lock is in progress.

GetConnectionsUsageStats (obsolete 4/99)

was last documented in Release 15 for NetWare 2.x only.

GetConnectionsUsingFile

Returns all logical connections using a file (For cross-platform functionality, see Developing NLMs with Cross-Platform Functions (NLM Development Concepts, Tools, and Functions) and call NWScanConnectionsUsingFile in Multiple and Inter-File Management)

Local Servers: blocking

Remote Servers: blocking

NetWare Server: 3.x, 4.x, 5.x, 6.x

Platform: NLM

Service: Server-Based Server Environment

Syntax

```
#include <nlm\nit\nwenvrn1.h>

T_RC GetConnectionsUsingFile (
   int     requestSize,
   void   *request,
   void   *buffer,
   int     bufferSize);
```

Parameters

requestSize

   (IN) Specifies the size of the request buffer.

request

   (IN) Points to a buffer containing the request structure.

buffer

   (IN/OUT) Points to a buffer which receives the response structure.

bufferSize

   (IN) Specifies the size of the buffer that receives the response structure. The buffer should be at least ENVSERV_BUFFER1_SIZE bytes.

Return Values

ESUCCESS or NetWare errors.

Remarks

This function uses a different request structure depending on whether the request is made to a NetWare 3.x (or above) server. You must determine the type of server that the request is sent to and put the correct request structure into the `request` buffer. If the wrong structure is submitted, this function returns EFAILURE.

The `buffer` receives the response structure.

The request buffer contains a CONN_USING_FILE_REQUEST structure, defined in NWENVRN1.H as follows:

```
typedef   struct CONN_USING_FILE_REQUEST
{
   WORD   unionType;
   WORD   reserved1;
   BYTE   reserved2;
   union
   {
      CONN_USING_FILE_REQ_386 req386;
   };
}CONN_USING_FILE_REQUEST;
```

The `unionType` field contains ENVSERV_CONN_TYPE_386 (for a NetWare 3.x or above server).

The `union` field contains the request structure for the server type that you want information for.

NetWare 3.x (or above) Server: The request structure you send to NetWare 3.x (or above) servers is CONN_USING_FILE_REQ_386, defined in NWENVRN1.H as follows:

```
typedef   struct CONN_USING_FILE_REQ_386
{
   BYTE   forkType;
   BYTE   volume;
   LONG   directoryID;
   WORD   nextRecord;
}CONN_USING_FILE_REQ_386;
```

The `forkType` field contains the index assigned (by Novell) to the non-primary data stream associated with the file (for example, the resource fork of a Macintosh file).

The `volume` field contains the volume that the file is on.

The `directoryID` field contains the directory handle of the directory that contains the file.

The `nextRecord` field identifies the first record to retrieve data for. This field must be set to 0 for the first call to this function. On subsequent calls, it should be given the value returned in the `nextRequestRecord` field of the reply structure.

The `buffer` receives a CONN_USING_FILE_REPLY structure, defined in NWENVRN1.H as follows:

```
typedef struct CONN_USING_FILE_REPLY
{
   WORD   unionType;
   union
   {
      struct CONN_USING_FILE_REPLY_386 rep386;
   };
}CONN_USING_FILE_REPLY;
```

The `unionType` field contains ENVSERV_CONN_TYPE_386 (for a NetWare 3.x or above server).

The `union` field contains the reply structure for the server type that you want information for.

NetWare 3.x (or above) Server: The `buffer` receives a CONN_USING_FILE_REPLY_386 structure followed by CONN_USING_FILE_RECORD_386 structures. The CONN_USING_FILE_REPLY_386 structure is defined in NWENVRN1.H as follows:

```
typedef struct CONN_USING_FILE_REPLY_386
{
   WORD    nextRequestRecord;
   WORD    useCount;
   WORD    openCount;
   WORD    openForReadCount;
   WORD    openForWriteCount;
   WORD    denyReadCount;
   WORD    denyWriteCount;
   BYTE    locked;
   BYTE    forkCount;
   WORD    numberOfRecords;   /* connection records follow */
}CONN_USING_FILE_REPLY_386;
```

The `nextRequestRecord` field contains a value to be passed in the `nextRecord` field of CONN_USING_FILE_REQ_386 for the next call to this function. This field contains 0 when the last record is retrieved and no more calls to this function need to be made.

In addition, this structure has a `forkCount` field, which contains the index assigned (by Novell) to the non-primary data stream associated with the file (for example, the resource fork of a Macintosh file).

The reply structure is followed by a number of structures, one for each connection using the file.

NetWare 3.x (or above) Server: The CONN_USING_FILE_REPLY_386 structure is followed by a number of CONN_USING_FILE_RECORD_386 structures, one for each connection using the file. This structure is defined in NWENVRN1.H as follows:

```
typedef    struct CONN_USING_FILE_RECORD_386
{
   WORD    connectionNumber;
   WORD    taskNumber;
   BYTE    lockType;
   BYTE    accessFlags;
   BYTE    lockStatus;
}CONN_USING_FILE_RECORD_386;
```

The `connectionNumber` field contains the connection number using the file.

The `taskNumber` field contains the connection's task number that is using the file.

The `lockType` field contains bit flags indicating the file's lock information, as shown below:

0 Locked
1 Open Shareable
2 Logged
3 Open Normal
6 TTS Holding Lock
7 Transaction Flag Set For This File

The `accessFlags` field contains bit flags indicating the connection/task's access rights for the file, as shown below:

0 Open for read by this connection
1 Open for write by this connection
2 Deny read requests by other connections
3 Deny write requests by other connections
4 File detached
5 TTS holding detach
6 TTS holding open

The `lockStatus` field contains a flag indicating the type of lock, if any, on the file, as follows:

Decimal	Hex	Description
0	0x00	Not locked
254	0xFE	Locked by a file lock
255	0xFF	Locked by Begin Share File Set

GetDiskCacheStats (obsolete 4/99)

was last documented in Release 15 for NetWare 2.x only.

GetDiskChannelStats (obsolete 4/99)

was last documented in Release 15 for NetWare 2.x only.

GetDiskUtilization

Returns the disk usage of an object on a volume (For cross-platform functionality, see Developing NLMs with Cross-Platform Functions (NLM Development Concepts, Tools, and Functions) and call NWGetDiskUtilization in Volume Management)

Local Servers: blocking

Remote Servers: blocking

NetWare Server: 3.x, 4.x, 5.x, 6.x

Platform: NLM

Service: Server-Based Server Environment

Syntax

```
#include <nlm\nit\nwenvrn.h>

int GetDiskUtilization (
   long    objectID,
   BYTE    volumeNumber,
   LONG    *usedDirectories,
   LONG    *usedFiles,
   LONG    *usedBlocks);
```

Parameters

objectID

   (IN) Specifies the unique ID of the object.

volumeNumber

   (IN) Specifies the volume for which statistics are requested (0-based).

usedDirectories

   (OUT) Receives the number of directories owned by the object.

usedFiles

   (OUT) Receives the number of files created by the object.

usedBlocks

   (OUT) Receives the number of disk blocks used by the object.

Return Values

Decimal	Hex	Constant
0	(0x00)	ESUCCESS
152	(0x98)	ERR_VOLUME_DOES_NOT_EXIST

Decimal	Hex	Constant
242	(0xF2)	ERR_NO_OBJECT_READ_PRIVILEGE

Remarks

This function returns the disk usage of an object by passing the object ID.

The volumeNumber parameter identifies the volume in a volume table on the server. The volume table contains information about each volume on the server.

The objectID parameter is 4-byte identification number assigned to an object by the server. It uniquely identifies the object within the NetWare Directory.

To determine the number of bytes an object is using on a volume, use the following equation:

```
bytes used =  usedBlocks
 * sectors/block * bytes/sector
```

Current network implementations allocate eight 512-byte sectors per block (4 KB per block).

This function requires Read privileges at the object level.

See Also

GetVolumeInformation (NetWare SDK)

GetDiskUtilization Example

```
#include <stdio.h>
#include <nlm\nit\nwenvrn.h>

main()
{
   int    ccode, volumeNumber;
   LONG   objectID, usedDirectories, usedFiles, usedBlocks;
   WORD   objType;
   char   objName[48], volName[16];
   printf ("\n\n");
   printf ("Enter object's name: ");
   scanf ("%s", objName);
   printf ("\nEnter object's type: ");
   scanf ("%d", &objType);
   ccode = GetBinderyObjectID (objName, objType, &objectID);
   printf ("\nEnter volume name:   ");
   scanf ("%s", volName);
   ccode = GetVolumeNumber (volName, &volumeNumber);
   ccode = GetDiskUtilization (objectID, *((BYTE *)volumeNumber),
      &usedDirectories, &usedFiles, &usedBlocks);
   if (ccode)
   {
      if (ccode == 152)
      printf ("\n\nVOLUME DOES NOT EXIST\n");
```

```c
        else if (ccode == 242)
        printf ("\n\nNO OBJECT READ PRIVILEGE\n");
        else
        printf ("\n\nccode = %d\n", ccode);
    }
    else
    {
        printf ("\n\n\nSUCCESSFULLY COMPLETED\n\n\n");
        printf ("Object ID...              %08lX\n", objectID);
        printf ("Volume Number...          %d\n", volumeNumber);
        printf ("Directories Used...       %u\n", usedDirectories);
        printf ("Files Used...             %u\n", usedFiles);
        printf ("Blocks Used...            %u\n", usedBlocks);
    }
}
```

GetDriveMappingTable (obsolete 4/99)

was last documented in Release 15 for NetWare 2.x only.

11.2 GetF*-TTS* Functions

Click on any function name in the table of contents to view the purpose, syntax, parameters, and return values for that function.

GetFileServerDateAndTime

Returns the date and time of the server (For cross-platform functionality, see Developing NLMs with Cross-Platform Functions (*NDK: NLM Development Concepts, Tools, and Functions*) and call NWGetFileServerDateAndTime (page 59))

Local Servers: blocking

Remote Servers: blocking

NetWare Server: 3.x, 4.x, 5.x, 6.x

Platform: NLM

Service: Server-Based Server Environment

Syntax

```
#include <nlm\nit\nwenvrn.h>

void GetFileServerDateAndTime (
   BYTE   *dateAndTime);
```

Parameters

dateAndTime

   (OUT) Receives the server's date and time (7 bytes).

Remarks

The `dateAndTime` parameter returns information in the following format:

Byte	Contents	Values	Explanation
0	Year	80 to 179	80-99 correspond to the years 1980-1999. 100-179 correspond to the years 2000-2079.
1	Month	1 to 12	
2	Day	1 to 31	
3	Hour	0 to 23	
4	Minute	0 to 59	
5	Second	0 to 59	
6	Day	(0 to 6)	A value of 0 = Sunday, 1 = Monday, 2 = Tuesday, etc.

The date and time are not synchronized across the network (between servers) unless time synchronization is active.

See Also

GetClockStatus (NetWare SDK), SetFileServerDateAndTime (page 476)

GetFileServerDateAndTime Example

```
#include <stdlib.h>
#include <stddef.h>
#include <stdio.h>
#include <nwtypes.h>
#include <nlm\nit\nwenvrn.h>

main()
{
   int    rc;
   char   d[7];
   GetFileServerDateAndTime(d);
   printf("year = %d\n",d[0]);
   printf("month = %d\n",d[1]);
   printf("day = %d\n",d[2]);
   printf("hour = %d\n",d[3]);
   printf("minute = %d\n",d[4]);
   printf("second = %d\n",d[5]);
   printf("weekday = %d\n",d[6]);
}
```

GetFileServerDescriptionStrings

Returns the name of the company that distributed this copy of NetWare (For cross-platform functionality, see Developing NLMs with Cross-Platform Functions (*NDK: NLM Development Concepts, Tools, and Functions*) and call NWGetFileServerDescription (page 61))

Local Servers: nonblocking

Remote Servers: blocking

NetWare Server: 3.x, 4.x, 5.x, 6.x

Platform: NLM

Service: Server-Based Server Environment

Syntax

```
#include <nlm\nit\nwenvrn.h>

int GetFileServerDescriptionStrings (
   char   *companyName,
   char   *revision,
   char   *revisionDate,
   char   *copyrightNotice);
```

Parameters

companyName

   (OUT) Receives a string containing the name of the company (80 characters, including the NULL terminator).

revision

   (OUT) Receives a string containing the NetWare version and revision (80 characters, including the NULL terminator).

revisionDate

   (OUT) Receives a string containing the revision date in the form MM/DD/YY (up to 24 characters, including the NULL terminator).

copyrightNotice

   (OUT) Receives a string containing the copyright notice (maximum 80 characters, including the NULL terminator).

Return Values

Decimal	Hex	Constant
0	(0x00)	ESUCCESS

Remarks

The `companyName`, `revision`, `revisionDate`, and `copyrightNotice` parameters return information about this copy of NetWare.

See Also

GetFileServerDescriptionStrings Example

```
#include <stdio.h>
#include <nlm\nit\nwenvrn.h>

main()
{
   int    ccode;
   char   companyName[80], revision[80];
   char   revisionDate[24], copyrightNotice[80];
   ccode = GetFileServerDescriptionStrings (companyName, revision,
                 revisionDate, copyrightNotice);
   if (ccode == 0)
   {
      printf ("\n\n\n");
      printf ("%s\n", companyName);
      printf ("%s\n", revision);
      printf ("%s\n", revisionDate);
      printf ("%s\n", copyrightNotice);
   }
}
```

GetFileServerLANIOStats (obsolete 4/99)

Was last documented in Release 15 for NetWare 2.x only.

GetFileServerLoginStatus

Returns the server's login status (For cross-platform functionality, see Developing NLMs with Cross-Platform Functions (*NDK: NLM Development Concepts, Tools, and Functions*) and call NWGetFileServerLoginStatus (page 71))

Local Servers: nonblocking

Remote Servers: blocking

NetWare Server: 3.x, 4.x, 5.x, 6.x

Platform: NLM

Service: Server-Based Server Environment

Syntax

```
#include <nlm\nit\nwenvrn.h>

int GetFileServerLoginStatus (
   int   *loginEnabledFlag);
```

Parameters

loginEnabledFlag

(OUT) Receives a flag indicating the status of the server's login state (0 = Login is disabled).

Return Values

Decimal	Hex	Constant
0	(0x00)	ESUCCESS
198	(0xC6)	ERR_NO_CONSOLE_RIGHTS

Remarks

The login status indicates whether logins are enabled or disabled.

Server logins can be disabled with the DisableFileServerLogin function so that new accesses to a server are restricted during a crucial period of time (before taking a server down). The EnableFileServerLogin function re-enables logins.

The requesting workstation must have console Operator rights.

See Also

DisableFileServerLogin (page 402), EnableFileServerLogin (page 408)

GetFileServerLoginStatus Example

```c
#include <stdio.h>
#include <stdlib.h>
#include <nlm\nit\nwenvrn.h>

main()
{
   int   ccode, loginEnabledFlag;
   ccode = GetFileServerLoginStatus (&loginEnabledFlag);
   if (ccode)
   {
      printf ("ccode = %d\n", ccode);
      exit (-1);
   }
   else
      if (loginEnabledFlag)
      printf ("Login is enabled.\n");
      else
      printf ("Login is disabled.\n");
   }
}
```

GetFileServerMiscInformation (obsolete 4/99)

Was last documented in Release 15 for NetWare 2.x only.

GetFileServerName

Returns the name of a server (For cross-platform functionality, see Developing NLMs with Cross-Platform Functions (*NDK: NLM Development Concepts, Tools, and Functions*) and call NWGetFileServerVersionInfo (page 74) or NWCCGetConnInfo)

Local Servers: nonblocking

Remote Servers: blocking

NetWare Server: 3.x, 4.x, 5.x, 6.x

Platform: NLM

Service: Server-Based Server Environment

Syntax

```
#include <nlm\nit\nwenvrn.h>

void GetFileServerName (
   WORD    fileServerID,
   char   *fileServerName);
```

Parameters

fileServerID

(IN) Contains the connection ID for which `fileServerName` is returned; if this number is 0, the name of the server is returned.

fileServerName

(OUT) Receives name of the server (maximum 48 characters).

Return Values

This function returns no value. If an error occurs, `NetWareErrno` is set to:

Decimal	Hex	Constant
115	(0x73)	ERR_BAD_CONNECTION_ID

Remarks

This function returns the name of a server by passing the `fileServerID`. If `fileServerID` is invalid, `fileServerName` is NULL.

Passing the `fileServerID` (server number) of any logged in remote server returns the name of that server. If `fileServerID` is 0, the name of the local server is returned.

See Also

GetFileServerName Example

```c
#include <stdio.h>
#include <nlm\nit\nwenvrn.h>

main()
{
   WORD   fileServerID;
   char   fileServerName[48];
   printf ("\n\n");
   printf ("Enter Connection ID: ");
   scanf ("%u", &fileServerID);
   GetFileServerName (fileServerID, fileServerName);
   printf ("Connection ID is: %u\n", fileServerID);
   printf ("Server Name is: %s\n", fileServerName);
}
```

GetFileSystemStats (obsolete 4/99)

Was last documented in Release 15 for NetWare 2.x only.

GetLANDriverConfigInfo (obsolete 4/99)

Was last documented in Release 15 for NetWare 2.x only.

GetLogicalRecordInformation

Returns information about a logical record (For cross-platform functionality, see Developing NLMs with Cross-Platform Functions (NLM Development Concepts, Tools, and Functions) and call NWScanLogicalLocksByName in Single and Intra-File Management)

Local Servers: blocking

Remote Servers: blocking

NetWare Server: 3.x, 4.x, 5.x, 6.x

Platform: NLM

Service: Server-Based Server Environment

Syntax

```
#include <nlm\nit\nwenvrn1.h>

T_RC GetLogicalRecordInformation (
    int     requestSize,
    void   *request,
    void   *buffer,
    int     bufferSize);
```

Parameters

requestSize

    (IN) Specifies the size of the request buffer.

request

    (IN) Points to a buffer containing the request structure.

buffer

    (IN/OUT) Points to a buffer which receives the response structure.

bufferSize

    (IN) Specifies the size of the buffer that receives the response structure. This buffer must be at least ENVSERV_BUFFER1_SIZE bytes.

Return Values

ESUCCESS or NetWare errors.

Remarks

The `request` buffer contains a CONN_USING_FILE_REQUEST structure, defined in NWENVRN1.H as follows:

```
typedef struct LOGICAL_RECORD_REQUEST
{
```

```
   WORD    reserved1;
   BYTE    reserved2;
   WORD    nextRecord;
   BYTE    nameLength;
   BYTE    name[255];
}LOGICAL_RECORD_REQUEST;
```

The `nextRecord` field identifies the first record to be processed by this function. This field must be set to 0 for the first call to this function. On subsequent calls, it must be set to the value returned in the `nextRequestRecord` field of the reply structure.

The `nameLength` field contains the length of `name`.

The `name` field contains the name of the logical record that you want information about.

The `buffer` parameter receives the response structure, LOGICAL_RECORD_INFO, which is defined in NWENVRN1.H as follows:

```
typedef struct LOGICAL_RECORD_INFO
{
   WORD    unionType;
   union
   {
      LOGICAL_RECORD_INFO_386 lr386;
   }u;
}LOGICAL_RECORD_INFO;
```

The `unionType` field indicates the type of information (386) that is returned. If the connection is to a NetWare 3.x (or above) server, `unionType` is ENVSERV_CONN_TYPE_386 and a LOGICAL_RECORD_INFO_386 structure is returned. Both structures are defined in NWENVRN1.H as follows:

```
typedef struct LOGICAL_RECORD_INFO_386
{
   WORD    useCount;
   WORD    shareableLockCount;
   BYTE    locked;
   WORD    nextRequestRecord;
   WORD    numberOfRecords;
}LOGICAL_RECORD_INFO_386;
```

The `useCount` field contains the number of logical connections that have the logical record logged.

The `sharableLockCount` field contains the number of logical connections that have a shareable lock on the logical record.

The `locked` field indicates whether the logical record is locked exclusively (0 = not locked exclusively).

The `nextRequestRecord` field identifies the next record to be processed by this function. This value is passed in the `nextRecord` field of the request function on the next call to this function. When 0 is returned in this field, there are no more records to be processed.

The `numberOfRecords` field contains the number of structures that follow in the buffer (LOGICAL_RECORD_386 structures). This structure is defined in NWENVRN1.H as follows:

```
typedef struct LOGICAL_RECORD_386
{
   WORD   connectionNumber;
   WORD   taskNumber;
   BYTE   lockStatus;
}LOGICAL_RECORD_386;
```

The `connectionNumber` field contains the connection number of the connection using the record.

The `taskNumber` field contains the number of the task within the connection that is using the record.

The `lockStatus` field contains the bit flags that indicate the record's lock status, as follows:

0 Locked
1 Open Shareable
2 Logged
3 Open Normal
6 TTS Holding Lock
7 Transaction Flag Set For This File

GetLogicalRecordsByConnection

Returns the logical records that a connection has logged with a server (For cross-platform functionality, see Developing NLMs with Cross-Platform Functions (NLM Development Concepts, Tools, and Functions) and call NWScanLogicalLocksByConn (in Single and Intra-File Management)

Local Servers: blocking

Remote Servers: blocking

NetWare Server: 3.x, 4.x, 5.x, 6.x

Platform: NLM

Service: Server-Based Server Environment

Syntax

```
#include <nlm\nit\nwenvrn1.h>

T_RC GetLogicalRecordsByConnection (
   WORD    connectionNumber,
   WORD    nextRecord,
   void    *buffer,
   int     bufferSize);
```

Parameters

connectionNumber

   (IN) Specifies the connection number to return information for.

nextRecord

   (IN) Specifies the first record to process. This parameter must be set to 0 for the first call to this function. On subsequent calls, it must be set to the value returned in the `nextRequest` field of the reply structure.

buffer

   (IN/OUT) Points to a buffer which receives the reply structure.

bufferSize

   (IN) Specifies the size of the buffer that receives the reply structure. This buffer must be at least ENVSERV_BUFFER1_SIZE bytes.

Return Values

ESUCCESS or NetWare errors.

Remarks

This function returns information about logical records that a given connection has logged with a server.

This function returns a CONN_LOGICAL_RECORD structure in `buffer`. This structure is defined in NWENVRN1.H as follows:

```
typedef struct CONN_LOGICAL_RECORD
{
   WORD   unionType;
   union
   {
      CONN_LOGICAL_RECORD_386 lr386;
   }u;
}CONN_LOGICAL_RECORD;
```

The `unionType` field indicates the type of information (386) that is returned. If the connection is to a NetWare 3.x (or above) server, `unionType` is ENVSERV_CONN_TYPE_386 and a CONN_LOGICAL_RECORD_386 structure is returned. This structure is defined in NWENVRN1.H as follows:

```
typedef struct CONN_LOGICAL_RECORD_386
{
   WORD   nextRequest;
   WORD   numberOfRecords;
}CONN_LOGICAL_RECORD_386;
```

The `nextRequestRecord` field identifies the next record to be processed by this function. This value is passed in the `nextRecord` parameter for the next call. When this field is 0, there are no more records to be processed.

The `numberOfRecords` field contains the number of structures that follow in the buffer (LOGICAL_RECORD_BLOCK_386). This structure is defined in NWENVRN1.H as follows:

```
typedef struct CONN_LOGICAL_RECORD_BLOCK_386
{
   WORD   taskNumber;
   BYTE   lockStatus;
   BYTE   lockNameLength;
   BYTE   lockName;         /* 1st byte - more follow */
}CONN_LOGICAL_RECORD_BLOCK_386;
```

The `taskNumber` field contains the number of the task within the connection that has the record logged.

The `lockStatus` field contains the bit flags indicating the record's lock status as follows:

0 Locked
1 Open Shareable
2 Logged
3 Open Normal
6 TTS Holding Lock
7 Transaction Flag Set For This File

The `lockNameLength` field contains the length of `lockName`.

The `lockName` field contains the name of the lock.

GetPathFromDirectoryEntry

Accesses a file path listed in a server's Directory Entry Table (DET) (For cross-platform functionality, see Developing NLMs with Cross-Platform Functions (*NDK: NLM Development Concepts, Tools, and Functions*).)

Local Servers: blocking

Remote Servers: blocking

NetWare Server: 3.x, 4.x, 5.x, 6.x

Platform: NLM

Service: Server-Based Server Environment

Syntax

```
#include <nlm\nit\nwenvrn1.h>

int GetPathFromDirectoryEntry (
   BYTE    volumeNumber,
   WORD    directoryEntry,
   BYTE   *pathLength,
   char   *path);
```

Parameters

volumeNumber

   (IN) Specifies the volume number of the volume containing the directory from which the file path is accessed.

directoryEntry

   (IN) Specifies the offset into the Directory Entry Table of the file path to be accessed.

pathLength

   (OUT) Receives the length of `path`.

path

   (OUT) Receives the file path of the directory (ASCIIZ string).

Return Values

ESUCCESS or NetWare errors.

Remarks

An application must call GetConnectionsOpenFiles to get the offset into the server's DET of the file path to be accessed before calling GetPathFromDirectoryEntry.

See Also

GetConnectionsOpenFiles (page 418)

GetPhysicalDiskStats (obsolete 4/99)

Was last documented in Release 15 for NetWare 2.x only.

GetPhysicalRecordLocksByFile

Returns physical records that are locked in a file (For cross-platform functionality, see Developing NLMs with Cross-Platform Functions (NLM Development Concepts, Tools, and Functions) and call NWScanPhysicalLocksByFile (Single and Intra-File Management

Local Servers: blocking

Remote Servers: blocking

NetWare Server: 3.x, 4.x, 5.x, 6.x

Platform: NLM

Service: Server-Based Server Environment

Syntax

```
#include <nlm\nit\nwenvrn1.h>

T_RC GetPhysicalRecordLocksByFile (
   int     requestSize,
   void   *request,
   void   *buffer,
   int    *bufferSize);
```

Parameters

requestSize

> (IN) Specifies the size of the request buffer.

request

> (IN) Points to a buffer containing the request structure.

buffer

> (IN/OUT) Points to a buffer which receives the response structure.

bufferSize

> (IN) Specifies the size of the buffer that receives the response structure. This buffer must be at least ENVSERV_BUFFER1_SIZE bytes.

Return Values

ESUCCESS or NetWare errors.

Remarks

This function uses a different request structure depending on whether the request is made to a NetWare 3.x (or above) server. You must determine the type of server that the request is sent to and put the correct request structure into the `request` buffer. If the wrong structure is submitted, this function returns EFAILURE.

The `buffer` parameter receives the response structure.

The request buffer contains a FILE_PHYSICAL_RECORD_REQUEST structure, defined in NWENVRN1.H as follows:

```
typedef struct FILE_PHYSICAL_RECORD_REQUEST
{
   WORD   unionType;
   WORD   reserved1;
   BYTE   reserved2;
   union
   {
      FILE_PHYSICAL_REQUEST_386 pr386;
   }u;
}   FILE_PHYSICAL_RECORD_REQUEST;
```

The `unionType` field contains ENVSERV_CONN_TYPE_386 (for a NetWare 3.x or above server).

The `union` field contains the request structure for the server type that you want information for.

NetWare 3.x (or above) Server: The request for a NetWare 3.x (or above) server contains a FILE_PHYSICAL_REQUEST_386 structure, defined in NWENVRN1.H as follows:

```
typedef struct FILE_PHYSICAL_REQUEST_386
{
   BYTE   forkType;
   BYTE   volume;
   LONG   directoryID;
   WORD   next;
}FILE_PHYSICAL_REQUEST_386;
```

The `forkType` field contains the index assigned (by Novell) to the non-primary data stream associated with the file (for example, the resource fork of a Macintosh file).

The `volume` field contains the volume number of the file to return information for.

The `directoryID` field contains the directory ID number of the file.

The `next` field identifies the next record to be processed by this function. It must be set to 0 on the first call to this function. On subsequent calls, it must be set to the value returned in the `nextRequest` field of the reply structure.

The `buffer` receives a FILE_PHYSICAL_RECORD_LOCK structure, defined in NWENVRN1.H as follows:

```
typedef struct FILE_PHYSICAL_RECORD_LOCK
{
   WORD unionType;
   union
   {
      FILE_PHYSICAL_RECORD_LOCK_386 pr386;
   }u;
}FILE_PHYSICAL_RECORD_LOCK;
```

The `unionType` field contains ENVSERV_CONN_TYPE_386 (for a NetWare 3.x or above server).

The `union` field contains the reply structure for the server type that you want information for. The reply structure is FILE_PHYSICAL_RECORD_LOCK_386 for a NetWare 3.x (or above) server. This structure is defined in NWENVRN1.H as follows:

```
typedef struct FILE_PHYSICAL_RECORD_LOCK_386
{
   WORD    nextRequest;
   WORD    numberOfLocks;
}FILE_PHYSICAL_RECORD_LOCK_386;
```

The `nextRequest` field identifies the next record to be processed by this function. On subsequent calls to this function, this value is passed in the `lastRecord` field of the request structure. When 0 is returned in this field, all records have been processed.

The `numberOfLocks` field contains the number of lock information structures which follow in the buffer. If information for a NetWare 3.x (or above) server is requested, FILE_PHYSICAL_RECORD_386 structures follow. This structure is defined in NWENVRN1.H as follows:

```
typedef struct FILE_PHYSICAL_RECORD_386
{
   WORD    loggedCount;
   WORD    shareLockCount;
   LONG    recordStart;
   LONG    recordEnd;
   WORD    connectionNumber;
   WORD    taskNumber;
   BYTE    lockType;
}FILE_PHYSICAL_RECORD_386;
```

The `loggedCount` field contains the number of physical record locks.

The `shareLockCount` field contains the number of tasks that have the record locked shareable.

The `recordStart` field contains the starting byte offset of the physical record lock within the file.

The `recordEnd` field contains the ending byte offset of the physical record lock within the file.

The `connectionNumber` field contains the number of the connection that has the record locked exclusively.

The `taskNumber` field contains the task number of the task within the connection that has the record locked exclusively.

The `lockType` field contains a flag indicating the type of lock, if any, on the file, as shown below:

Decimal	Hex	Description
0	0x00	Not locked
254	0xFE	Locked by a file lock
255	0xFF	Locked by Begin Share File Set

The requesting connection must have console operator rights.

See Also

GetPhysRecLockByConnectAndFile (page 462)

GetPhysRecLockByConnectAndFile

Returns a logical connection's physical record locks within a file (For cross-platform functionality, see Developing NLMs with Cross-Platform Functions (NLM Development Concepts, Tools, and Functions) and call NWScanPhysicalLocksByConnFile (Single and Intra-File Management)

Local Servers: blocking

Remote Servers: blocking

NetWare Server: 3.x, 4.x, 5.x, 6.x

Platform: NLM

Service: Server-Based Server Environment

Syntax

```
#include <nlm\nit\nwenvrn1.h>

T_RC GetPhysRecLockByConnectAndFile (
   int    requestSize,
   void   *request,
   void   *buffer,
   int    *bufferSize);
```

Parameters

requestSize

    (IN) Specifies the size of the request buffer.

request

    (IN) Points to a buffer containing the request structure.

buffer

    (IN/OUT) Points to a buffer which receives the response structure.

bufferSize

    (IN) Specifies the size of the buffer that receives the response structure. This buffer must be at least ENVSERV_BUFFER1_SIZE bytes.

Return Values

ESUCCESS or NetWare errors.

Remarks

This function uses a different request structure depending on whether the request is made to a NetWare 3.x (or above) server. You must determine the type of server that the request is sent to and put the correct request structure into the `request` buffer. If the wrong structure is submitted, this function returns EFAILURE.

The `buffer` parameter receives the response structure.

The request buffer contains a CONN_LOCK_REQUEST structure, defined in NWENVRN1.H as follows:

```
typedef struct CONN_LOCK_REQUEST
{
   WORD   unionType;
   WORD   reserved1;
   BYTE   reserved2;
   union
   {
      CONN_LOCK_REQUEST_386 lr386;
   }u;
}CONN_LOCK_REQUEST;
```

The `unionType` field contains ENVSERV_CONN_TYPE_386 (for a NetWare 3.x or above server).

The `union` field contains the request structure for the server type that you want information for.

NetWare 3.x (or above) Server: The request for a NetWare 3.x (or above) server contains a CONN_LOCK_REQUEST_386 structure, defined in NWENVRN1.H as follows:

```
typedef struct CONN_LOCK_REQUEST_386
{
   WORD   connectionNumber;
   BYTE   forkType;
   BYTE   volume;
   LONG   directoryID;
   WORD   next;
}CONN_LOCK_REQUEST_386;
```

The `connectionNumber` field contains the connection number to obtain information for.

The `forkType` field contains the index assigned (by Novell) to the nonprimary data stream associated with the file (for example, the resource fork of a Macintosh file).

The `volume` field contains the number of the volume that contains the file.

The `directoryID` field contains the ID number of the directory that contains the file.

The `next` field identifies the next record to be processed by this function. On the first call, this field must be set to 0. On subsequent calls, it must be set to the value returned in the `nextRecord` field of the reply structure.

The `buffer` receives a CONN_RECORD_LOCKS structure, defined in NWENVRN1.H as follows:

```
typedef struct CONN_RECORD_LOCKS
{
   WORD   unionType;
   union
   {
      CONN_RECORD_LOCKS_386 rl386;
   }u;
}CONN_RECORD_LOCKS;
```

The `unionType` field contains ENVSERV_CONN_TYPE_386 (for a NetWare 3.x or above server).

The `union` field contains the reply structure for the server type that you want information for. The reply structure is CONN_RECORD_LOCKS_386 for a NetWare 3.x (or above) server. This structure is defined in NWENVRN1.H as follows:

```
typedef struct CONN_RECORD_LOCKS_386
{
   WORD    nextRecord;
   WORD    numberOfLocks;          /* record locks follow */
}CONN_RECORD_LOCKS_386;
```

The `nextRecord` field identifies the next record to be processed by this function. This value is passed to the next call in `next` (for NetWare 3.x) field of the request structure. When 0 is returned in this field, all records have been processed.

The `numberOfLocks` field contains the number of lock information structures which follow in the buffer. If information for a NetWare 3.x (or above) server is requested, CONN_LOCK_RECORD_386 structures follow. These structures are defined in NWENVRN1.H as follows:

```
typedef struct CONN_LOCK_RECORD_386
{
   WORD    taskNumber;
   BYTE    lockFlag;
   LONG    recordStart;
   LONG    recordEnd;
}CONN_LOCK_RECORD_386;
```

The `taskNumber` field contains the task number of the task within the connection that has the record locked exclusively.

The `lockFlag` field contains the bit flags indicating the record's lock status as follows:

0 Locked
1 Open Shareable
2 Logged
3 Open Normal
6 TTS Holding Lock
7 Transaction Flag Set For This File

The `recordStart` field contains the byte offset of the physical record lock within the file.

The `recordEnd` field contains the byte offset of the physical record lock within the file.

The requesting connection must have console operator rights.

See Also

GetSemaphoreInformation

Returns information about a semaphore (For cross-platform functionality, see Developing NLMs with Cross-Platform Functions (NLM Development Concepts, Tools, and Functions) and call NWExamineSemaphore in Single and Intra-File Management)

Local Servers: blocking

Remote Servers: blocking

NetWare Server: 3.x, 4.x, 5.x, 6.x

Platform: NLM

Service: Server-Based Server Environment

Syntax

```
#include <nlm\nit\nwenvrn1.h>

T_RC GetSemaphoreInformation (
   int    requestSize,
   void   *request,
   void   *buffer,
   int    *bufferSize);
```

Parameters

requestSize

 (IN) Specifies the size of the request buffer.

request

 (IN) Points to a buffer containing the request structure.

buffer

 (IN/OUT) Points to a buffer which receives the response structure.

bufferSize

 (IN) Specifies the size of the buffer that receives the response structure. This buffer must be at least ENVSERV_BUFFER1_SIZE bytes.

Return Values

ESUCCESS or NetWare errors.

Remarks

This function uses a different request structure depending on whether the request is made to a NetWare 3.x (or above) server. You must determine the type of server that the request is sent to and put the correct request structure into the `request` buffer. If the wrong structure is submitted, this function returns EFAILURE.

The `buffer` parameter receives the response structure.

The `request` buffer contains a SEMAPHORE_INFO_REQUEST structure, defined in NWENVRN1.H as follows:

```
typedef struct SEMAPHORE_INFO_REQUEST
{
   WORD    reserved1;
   BYTE    reserved2;
   WORD    nextRecord;
   BYTE    nameLength;
   BYTE    name[255];
}SEMAPHORE_INFO_REQUEST;
```

The `nextRecord` field identifies the next record to be processed by this function. This field must be set to 0 on the first call to this function. On subsequent calls, it must be set to the value returned in the `nextRequest` field of the reply structure.

The `nameLength` field contains the length of `name`.

The `name` field contains the name of the semaphore to obtain information for.

The `buffer` receives a SEMAPHORE_INFO structure, defined in NWENVRN1.H as follows:

```
typedef struct SEMAPHORE_INFO
{
   WORD    unionType;
   union
   {
      SEMAPHORE_INFO_386 si386;
   }u;
}SEMAPHORE_INFO;
```

The `unionType` field contains ENVSERV_CONN_TYPE_386 (for a NetWare 3.x or above server).

The `union` field contains the reply structure for the server type that you want information for. The reply structure is SEMAPHORE_INFO_386 for a NetWare 3.x (or above) server. This structure is defined in NWENVRN1.H as follows:

```
typedef struct SEMAPHORE_INFO_386
{
   WORD    nextRequest;
   WORD    openCount;
   WORD    semaphoreValue;
   WORD    numberOfRecords;
}SEMAPHORE_INFO_386;
```

The `nextRequest` field identifies the next record to be processed by this function. This value is passed in the `nextRecord` field of the request structure on the next call to this function. When 0 is returned in this field, all records have been processed.

The `openCount` field contains the number of logical connections that have this semaphore open.

The `semaphoreValue` field contains the current value of the semaphore. A negative value is usually interpreted as the number of objects waiting for the service represented by the semaphore. A

positive value is usually interpreted as the number of free resources available in the resource pool governed by the semaphore.

The `numberOfRecords` field contains the number of semaphore information records that follow in the reply buffer. These records are SEMAPHORE_INFO_RECORD_386 structures for NetWare 3.x (or above) servers. This structure is defined in NWENVRN1.H as follows:

```
typedef struct SEMAPHORE_INFO_RECORD_386
{
   WORD    connectionNumber;
   WORD    taskNumber;
}SEMAPHORE_INFO_RECORD_386;
```

The `connectionNumber` field contains the connection number of the connection using the semaphore.

The `taskNumber` field contains the task number of the task within the connection that is using the semaphore.

GetServerInformation

Returns information about the server (For cross-platform functionality, see Developing NLMs with Cross-Platform Functions (*NDK: NLM Development Concepts, Tools, and Functions*) and call NWGetFileServerVersionInfo (page 74))

Local Servers: nonblocking

Remote Servers: blocking

NetWare Server: 3.x, 4.x, 5.x, 6.x

Platform: NLM

Service: Server-Based Server Environment

Syntax

```
#include <nlm\nit\nwenvrn.h>

int GetServerInformation (
   int              structSize,
   FILE_SERV_INFO   *serverInfo);
```

Parameters

structSize

   (IN) Specifies the number of bytes to return in `serverInfo`.

serverInfo

   (OUT) Receives the statistics of the server (maximum 128 bytes).

Return Values

Decimal	Hex	Constant
0	(0x00)	ESUCCESS

Remarks

This function allows the user to retrieve all or part of the information about the server where the current connection is logged in. The function returns up to `structSize` bytes in `serverInfo`.

The FILE_SERV_INFO structure that `serverInfo` points to has the following definition:

```
{
   char   serverName[48];
   BYTE   netwareVersion;
   BYTE   netwareSubVersion;
   WORD   maxConnectionsSupported;
   WORD   connectionsInUse;
```

```
   WORD    maxVolumesSupported;
   BYTE    revisionLevel;
   BYTE    SFTLevel;
   BYTE    TTSLevel;
   WORD    peakConnectionsUsed;
   BYTE    accountingVersion;
   BYTE    VAPversion;
   BYTE    queingVersion;
   BYTE    printServerVersion;
   BYTE    virtualConsoleVersion;
   BYTE    securityRestrictionLevel;
   BYTE    internetBridgeSupport;
   BYTE    reserved[60];
   BYTE    CLibMajorVersion;
   BYTE    CLibMinorVersion;
   BYTE    CLibRevision;
}   FILE_SERV_INFO;
```

`netwareVersion` and `netwareSubVersion` contain the NetWare service (or OS) version information, not the NetWare product version. To get these values, type version on the server and look at the returned Server Version value. The following table lists common NetWare products and their corresponding values:

NetWare Product	netwareVersion value	netwareSubVersion value
NetWare 4.11	4	11
NetWare 5.1	5	0
NetWare 6	5	60

The following fields in this structure contain different information depending on the version of CLIB used in calling the function, whether the call is made to a local or remote server, and the version of the server that is queried:

- `maxConnectionsSupported`
- `connectionsInUse`
- `peakConnectionsUsed`

The following describes the contents of the `maxConnectionsSupported` field under different circumstances.

Calling a remote pre-4.0 server	Contains the size of the workstation connection table, which corresponds to the number of workstation connections the server supports (for example, 250 for 250-User NetWare).
Calling the local pre-4.0 server	Contains the same value as `maxConnectionsSupported` when calling a remote pre-4.0 server (above) **plus** the number of NLM connections that the server supports. If the number of NLM connections supports is 100, then a 250-user server would give a value of 350 in this field.

Calling a 4.x server, local or remote	Contains the maximum number of connections (licensed and unlicensed) that have been simultaneously attached, or are currently attached to the server. This value does not decrease. For example, if 15 workstations have been simultaneously logged in, but only three workstations are logged in when GetServerInformation is called, maxConnectionsSupported will contain a value of 15.
	`maxConnectionsSupported` does not contain the maximum number of licensed connections that are possible for the 4.x server. This is because 4.x servers use licensing technology to manage users and now allow an unlimited amount of unlicensed connections. Therefore, this value is not a static value.

The following describes the contents of the `connectionsInUse` field under different circumstances.

Calling a pre-4.0 server, local or remote	Contains the number of workstation connections currently attached to the server. The number does not include internal NLM connections, nor does it reflect whether the connections are logged-in (licensed) or not.
Calling a 4.x server, local or remote	Contains the number of licensed workstation or internal NLM connections currently attached to the server. The number does not include connections which are not licensed.

The following describes the contents of the `peakConnectionsUsed` field under different circumstances.

Calling a pre-4.0 server, local or remote	Contains the maximum number of workstation connections that are simultaneously attached to the server. The number does not include internal NLM connections, nor does it reflect whether the connections are logged-in (licensed) or not.
Calling a 4.x server, local or remote	Contains the maximum number of licensed workstation or internal NLM connections that are simultaneously attached to the server. The number does not include connections which are not licensed.

The connection licensing of 4.x brought on a fundamental change in the meaning of the above fields. CLIB version 4.0 and later supports additional "statistical service" functions to provide NetWare 4.x specific information about connections. (See the "SS" functions, such as SSGetActiveConnListByType, SSGetFileServerInfo, SSGetOSVersionInfo, SSGetUserInfo). SSGetOSVersionInfo returns a `maxNumOfConn` field, which is the size of the connection table, and another field `maxNumOfUsers`, which is the maximum number of licensed connections except on NetWare versions using Novell Licensing Services (NLS).

Using these functions in combination with the information returned from GetServerInformation should give you all you need to know about the connections on NetWare 4.x servers, with the following important exception.

IMPORTANT: Under the NetWare 5.x or 6.x OS or any other NetWare version that uses Novell Licensing Services (NLS), the `maxNumOfUsers` value returned by SSGetOSVersionInfo is not always equal to the maximum nubmer of licensed connections. For this reason, Novell strongly discourages tying the value of `maxNumOfUsers` to the licensing of any product.

See Also

GetServerInformation Example

```c
#include <stdio.h>
#include <nlm\nit\nwenvrn.h>

main()
{
   int               ccode, structSize;
   FILE_SERV_INFO  sbuf;
   printf ("\n\n");
   structSize = 128;
   ccode = GetServerInformation (structSize, &sbuf);
   if (ccode == 0)
   {
      printf ("ServerName: %s\n", sbuf.serverName);
      printf ("NetwareVersion: %d\n", sbuf.netwareVersion);
      printf ("NetwareSubVersion: %d\n", sbuf.netwareSubVersion);
      printf ("Max Connections Supported: %d\n",
              sbuf.maxConnectionsSupported);
      printf ("Connections In Use:%d\n", sbuf.connectionsInUse);
      printf ("Max Volumes Supported: %d\n",
              sbuf.maxVolumesSupported);
      printf ("Revision Level: %d\n", sbuf.revisionLevel);
      printf ("SFT Level: %d\n", sbuf.SFTLevel);
      printf ("TTS Level: %d\n", sbuf.TTSLevel);
      printf ("Peak Connections Used: %d\n",
              sbuf.peakConnectionsUsed);
      printf ("Accounting Version: %d\n", sbuf.accountingVersion);
      printf ("VAP Version: %d\n", sbuf.VAPversion);
      printf ("Queing version: %d\n", sbuf.queingVersion);
      printf ("Print Server Version: %d\n",
              sbuf.printServerVersion);
      printf ("Virtual Console Version: %d\n",
              sbuf.virtualConsoleVersion);
      printf ("Security Restriction Level: %d\n",
              sbuf.securityRestrictionLevel);
      printf ("Internet Bridge Support: %d\n",
              sbuf.internetBridgeSupport);
      printf ("CLIB Major Version: %d\n", sbuf.CLibMajorVersion);
      printf ("CLIB Minor Version: %d\n", sbuf.CLibMinorVersion);
      printf ("CLIB Revision: %d\n", sbuf.CLibRevision);
   }
   else
      printf ("ccode = %d\n", ccode);
}
```

GetServerMemorySize

Returns the amount of memory (RAM) on the server. (For cross-platform functionality, see Developing NLMs with Cross-Platform Functions (*NDK: NLM Development Concepts, Tools, and Functions*).)

Local Servers: nonblocking

Remote Servers: N/A

NetWare Server: 3.12E, 3.2, 4.01C, 4.1

Platform: NLM

Service: Server-Based Server Environment

Syntax

```
#include <nlm\nit\nwenvrn.h>

LONG GetServerMemorySize (void);
```

Return Values

The amount of memory (in bytes) known to the NetWare server, or EFAILURE.

Remarks

GetServerMemorySize returns EFAILURE if it is called in the MS Engine of an SFT III server.

GetServerMemorySize Example

```
#include <stdio.h>
#include <stdlib.h>
#include <nlm\nit\nwenvrn.h>
#include <process.h>
#include <conio.h>

main()
{
   printf("Server memory: %i\n",
   GetServerMemorySize());
}
```

GetServerUtilization

Returns the server utilization value that can be seen from MONITOR.NLM

Local Servers: nonblocking

Remote Servers: N/A

NetWare Server: 3.12E, 3.2, 4.01C, 4.1

Platform: NLM

Service: Server-Based Server Environment

Syntax

```
#include <nlm\nit\nwenvrn.h>

LONG GetServerUtilization (void);
```

Return Values

The utilization value as computed by MONITOR.NLM.

Remarks

The utilization of a NetWare server is a value that can be used to make a measurement of how busy a server is. This value is computed based upon how many processes running idle loops have run on the server. The value returned by GetServerUtilization is a measurement at a single instance in time.

Since the value returned by GetServerUtilization is the utilization at a single instance in time, determining a complete picture of a server's utilization cannot be determined by one call to GetServerUtilization. A more meaningful measurement of how the server is being utilized is determined by computing an average value of the utilization and determining the deviation from the average.

GetServerUtilization Example

```
<include stdlib.h>
<include nwenvrn.h>
<include process.h>
<include conio.h>

void main(void)
{
   while(TRUE)
   {
      printf("\nUtilization: %i\n",
      GetServerUtilization());
      ThreadSwitchWithDelay();
   }
}
```

SendConsoleBroadcast

Sends a message to a list of connections (For cross-platform functionality, see Developing NLMs with Cross-Platform Functions (*NDK: NLM Development Concepts, Tools, and Functions*) and call NWSendConsoleBroadcast)

Local Servers: blocking

Remote Servers: blocking

NetWare Server: 3.x, 4.x, 5.x, 6.x

Platform: NLM

Service: Server-Based Server Environment

Syntax

```
#include <nlm\nit\nwenvrn.h>

int SendConsoleBroadcast (
   char    *message,
   WORD    connectionCount,
   WORD    *connectionList);
```

Parameters

message

> (IN) Specifies the string containing the message to send (maximum 60 characters, including the NULL terminator).

connectionCount

> (IN) Specifies the number of logical connections in the connectionList (0 = broadcast to all workstations).

connectionList

> (IN) Contains a list of logical connection numbers to receive the message.

Return Values

Decimal	Hex	Constant
0	(0x00)	ESUCCESS
198	(0xC6)	ERR_NO_CONSOLE_RIGHTS

Remarks

Messages do not reach a workstation that has disabled broadcasts.

The requesting workstation must have console Operator rights.

See Also

SendConsoleBroadcast Example

```c
#include <stdio.h>
#include <nlm\nit\nwenvrn.h>

main()
{
   int   i, ccode;
   char  message[60];
   WORD  connectionList[100];
   WORD  connectionCount;
   char  buf[4];
   printf ("\n\n");
   printf ("Enter number of messages to send:   ");
   gets (buf);
   connectionCount = (WORD) atoi (buf);
   for (i=0; i<connectionCount; i++)
   {
      printf ("\nEnter connection number %d: ", i+1);
      gets (buf);
      connectionList[i] = (WORD) atoi (buf);
   }
   printf ("\nEnter message to be sent:\n");
   printf ("—-> ");
   gets (message);
   ccode = SendConsoleBroadcast (message,
                                 connectionCount,
                                 connectionList);
   if (ccode == 0)
      printf("—-- SUCCESSFUL ——\n\n");
   if (ccode == 198)
      printf("—- NO_CONSOLE_RIGHTS —-\n\n");
}
```

SetFileServerDateAndTime

Sets the date and time of the server (For cross-platform functionality, see Developing NLMs with Cross-Platform Functions (*NDK: NLM Development Concepts, Tools, and Functions*) and call NWSetFileServerDateAndTime (page 169))

Local Servers: nonblocking

Remote Servers: blocking

NetWare Server: 3.x, 4.x, 5.x, 6.x

Platform: NLM

Service: Server-Based Server Environment

Syntax

```
#include <nlm\nit\nwenvrn.h>

int SetFileServerDateAndTime (
   WORD    year,
   WORD    month,
   WORD    day,
   WORD    hour,
   WORD    minute,
   WORD    second);
```

Parameters

date and time

   (IN) These parameters set the server's date and time.

Return Values

Decimal	Hex	Constant
0	(0x00)	ESUCCESS
198	(0xC6)	ERR_NO_CONSOLE_RIGHTS

Remarks

The date and time parameters accept information in the following format:

Decimal	Corresponds To	Values	Explanation
0	Year	0 to 179	0-79 and 100-179 correspond to the years 2000-2079. 80-99 correspond to the years 1980-1999.

Decimal	Corresponds To	Values	Explanation
1	Month	1 to 12	
2	Day	1 to 31	
3	Hour	0 to 23	
4	Minute	0 to 59	
5	Second	0 to 59	
6	Day	0 to 6	A value of 0 = Sunday, 1 = Monday, 2 = Tuesday, and so on

If an invalid value, such as 250 for the month, is specified, an error will not be returned. The server will be set to an undefined but valid date and time.

The date and time are not synchronized across the network (between servers).

The requesting workstation must have console Operator or Supervisor rights.

NOTE: If you are running time synchronization (NetWare 4.x) this function behaves differently depending on the server whose time you change:

If you change the time of the Reference Server, the time for the network is eventually changed.

If you change the time of a Primary Server, its time is eventually synchronized to the network time.

If you change the time of a Secondary Server, its time is eventually synchronized to the network time.

See Also

SetFileServerDateAndTime Example

```
#include <stdlib.h>
#include <stddef.h>
#include <stdio.h>
#include <nwtypes.h>
#include <nlm\nit\nwenvrn.h>

main()
{
   int rc;
   WORD year, month, day, hour, minute, second;
   printf("enter year, month, day, hour, minute, second:\n");
   scanf("%hu,%hu,%hu,%hu,%hu,%hu", &year, &month, &day, &hour,
      &minute, &second);
   rc = SetFileServerDateAndTime(year, month, day, hour,
      minute, second);
```

```
        printf("rc = %d",rc);
    }
```

TTSGetStats (Obsolete-moved from .h file 4/99)

Obsolete—last documented in Release 15 of the Limited Support NetWare SDK.

11.3 SSGetA*-SSGetK* Functions

Click on any function name in the table of contents to view the purpose, syntax, parameters, and return values for that function.

SSGetActiveConnListByType

Returns a list of active connection numbers of a given connection type. For cross-platform functionality, use NWGetActiveConnListByType (page 45).

Local Servers: blocking

Remote Servers: blocking

NetWare Server: 4.x, 5.x, 6.x

Platform: NLM

Service: Server-Based Server Environment

Syntax

```
#include <nit\nwservst.h>

LONG SSGetActiveConnListByType (
   LONG    startConnNumber,
   LONG    connType,
   BYTE   *buffer,
   LONG    bufferLen);
```

Parameters

startConnNumber

   (IN) Specifies the connection number to start with.

connType

   (IN) Specifies the type of connection to return information for.

buffer

   (IN/OUT) Points to a buffer which receives a list of connections.

bufferLen

   (IN) Specifies the size of buffer. This should be the size of GetActiveConnListByTypeStructure.

Return Values

ESUCCESS or NetWare® errors.

Remarks

This function returns a connection list of all connections of a given type on the currently connected server. The connType parameter can have one of the following values:

1	(Included for CLIB backwards compatibility)

2	NCP_CONNECTION_TYPE
3	NLM_CONNECTION_TYPE
4	AFP_CONNECTION_TYPE
5	FTAM_CONNECTION_TYPE
6	ANCP_CONNECTION_TYPE

This function returns a GetActiveConnListByTypeStructure in `buffer`. This structure is defined in NWSERVST.H as follows:

```
typedef struct GetActiveConnListByTypeStructure
{
   LONG   currentServerTime;
   BYTE   vConsoleVersion;
   BYTE   vConsoleRevision;
   WORD   reserved;
   BYTE   ActiveConnBitList[512];
}GetActiveConnListByTypeStructure;
```

The `currentServerTime` field contains the time elapsed since the server was brought up. This time is returned in ticks (approximately 1/18 of a second). When this field reaches 0xFFFFFFFF, it wraps to zero.

The `vConsoleVersion` field contains the console version number. `vConsoleVersion` and `vConsoleRevision` track packet format.

The `vConsoleRevision` field contains the console version revision number.

The `ActiveConnBitList` field indicates active connections. An array of 512 bytes is returned where a bit is set for each active connection. The connection number is determined by its position in the array.

SSGetActiveLANBoardList

Returns information about the active LAN boards on a server. For cross-platform functionality, use NWGetActiveLANBoardList (page 47) instead.

Local Servers: blocking

Remote Servers: blocking

NetWare Server: 4.x, 5.x, 6.x

Platform: NLM

Service: Server-Based Server Environment

Syntax

```
#include <nit\nwservst.h>

LONG SSGetActiveLANBoardList (
   LONG    startNumber,
   BYTE   *buffer,
   LONG    bufferLen);
```

Parameters

startNumber

   (IN) Specifies the number of LAN board to start with.

buffer

   (IN/OUT) Points to a buffer which receives a list of LAN boards.

bufferLen

   (IN) Specifies the size of `buffer`. This should be SS_DEFAULT_BUFFER_SIZE.

Return Values

ESUCCESS or NetWare errors.

Remarks

This function returns a GetActiveLANBoardListStructure in `buffer`. This structure is defined in NWSERVST.H as follows:

```
typedef struct GetActiveLANBoardListStructure
{
   LONG    currentServerTime;
   BYTE    vConsoleVersion;
   BYTE    vConsoleRevision;
   WORD    reserved;
   LONG    maxNumOfLANs;
   LONG    itemsCount;
```

```
   LONG   boardNumbers;
}GetActiveLANBoardListStructure;
```

The `currentServerTime` field contains the time elapsed since the server was brought up. This time is returned in ticks (approximately 1/18 of a second). When this field reaches 0xFFFFFFFF, it wraps to zero.

The `vConsoleVersion` field contains the console version number. `vConsoleVersion` and `vConsoleRevision` track packet format.

The `vConsoleRevision` field contains the console version revision number.

The `maxNumOfLANs` field contains the total number of LAN boards.

The `itemsCount` field contains the number of LAN boards returned by this call to SSGetActiveLANBoardList. To retrieve the rest of the board numbers, call this function again, using the total number of items returned by all previous calls to SSGetActiveLANBoardList plus 1 as `startNumber`.

The `boardNumbers` field contains the first LAN board number. This number is followed in the buffer by board numbers for each LAN board.

SSGetActiveProtocolStacks

Returns protocol stack information. For cross-platform functionality, use
instead.

Local Servers: blocking

Remote Servers: blocking

NetWare Server: 4.x, 5.x, 6.x

Platform: NLM

Service: Server-Based Server Environment

Syntax

```
#include <nit\nwservst.h>

LONG SSGetActiveProtocolStacks (
   LONG    startNumber,
   BYTE   *buffer,
   LONG    bufferLen);
```

Parameters

startNumber

(IN) Specifies the number to start with if this function is being called iteratively. On the first call, this parameter should be 0. On subsequent calls, use the number of stacks retrieved.

buffer

(IN/OUT) Points to a buffer which receives protocol stack information.

bufferLen

(IN) Specifies the size of `buffer`. This should be SS_DEFAULT_BUFFER_SIZE.

Return Values

ESUCCESS or NetWare errors.

Remarks

This function returns a GetActiveProtocolStackStructure in `buffer`. This structure is defined in NWSERVST.H as follows:

```
typedef struct GetActiveProtocolStackStructure
{
   LONG   currentServerTime;
   BYTE   vConsoleVersion;
   BYTE   vConsoleRevision;
   WORD   reserved;
   LONG   maxNumberOfStacks;
```

```
   LONG    stackCount;
   ProtocolStackInfo stackInfo;
}GetActiveProtocolStackStructure;
```

The `currentServerTime` field contains the time elapsed since the server was brought up. This time is returned in ticks (approximately 1/18 of a second). When this field reaches 0xFFFFFFFF, it wraps to zero.

The `vConsoleVersion` field contains the console version number. `vConsoleVersion` and `vConsoleRevision` track packet format.

The `vConsoleRevision` field contains the console version revision number.

The `numberOfSegments` field contains the number of volume segments on the volume.

The `maxNumberOfStacks` field contains the total number of protocol stacks.

The `stackCount` field contains the number of ProtocolStackInfo structures in the buffer.

The `stackInfo` field contains the first ProtocolStackInfo structure in the buffer.

The ProtocolStackInfo structure is defined in NWSERVST.H as follows:

```
typedef struct ProtocolStackInfo
{
   LONG    stackNumber;
   BYTE    stackName[16];
}ProtocolStackInfo;
```

The `stackNumber` field contains the protocol number.

The `stackName` field contains a length-preceeded string that represents the name of the protocol stack.

SSGetCacheInfo

Returns information about a server's cache buffers. For cross-platform functionality, use instead.

Local Servers: blocking

Remote Servers: blocking

NetWare Server: 4.x, 5.x, 6.x

Platform: NLM

Service: Server-Based Server Environment

Syntax

```
#include <nit\nwservst.h>

LONG SSGetCacheInfo (
   BYTE    *buffer,
   LONG    bufferLen);
```

Parameters

buffer

   (IN/OUT) Points to a buffer which receives cache buffer information structures.

bufferLen

   (IN) Specifies the size of `buffer`. This should be the size of GetCacheInfoStructure.

Return Values

ESUCCESS or NetWare errors.

Remarks

This function returns cache buffer information for the current connection.

This function returns the GetCacheInfoStructure in `buffer`. This structure is defined in NWSERVST.H as follows:

```
typedef struct GetCacheInfoStructure
{
   LONG                  currentServerTime;
   BYTE                  VConsoleVersion;
   BYTE                  VConsoleRevision;
   WORD                  reserved;
   LONG                  CacheCntrs[26];
   CacheMemoryCounters   MemoryCntrs;
   CacheTrendCounters    TrendCntrs;
```

```
   CacheInformation      CacheInfo;
}GetCacheInfoStructure;
```

The `currentServerTime` field contains the time elapsed since the server was brought up. This time is returned in ticks (approximately 1/18 of a second). When this field reaches 0xFFFFFFFF, it wraps to zero.

The `VConsoleVersion` field contains the console version number. `VConsoleVersion` and `VConsoleRevision` track packet format.

The `VConsoleRevision` field contains the console version revision number.

The `CacheCntrs` field contains an array of counters that are used by Novell® for debugging.

The `MemoryCntrs`, `TrendCntrs`, and `CacheInfo` fields contain structures which hold cache buffer information.

The CacheMemoryCounters structure is defined in NWSERVST.H as follows:

```
typedef struct {
   LONG   OriginalNumberOfCacheBuffers;
   LONG   CurrentNumberOfCacheBuffers;
   LONG   CacheDirtyBlockThreshold;
   LONG   debugCounters[7];
} CacheMemoryCounters;
```

The `OriginalNumberOfCacheBuffers` field contains the number of cache buffers that existed when the server was brought up.

The `CurrentNumberOfCacheBuffers` field contains the number of cache buffers presently on the server.

The `CacheDirtyBlockThreshold` field contains the maximum number o cache blocks allowed to be dirty simultaneously.

The `debugCounters` field contains an array of counters that are used by Novell for debugging.

The CacheTrendCounters structure is defined in NWSERVST.H as follows:

```
typedef struct {
   LONG   NumOfCacheChecks;
   LONG   NumOfCacheHits;
   LONG   debugCounters[7];
   LONG   LRUSittingTime;
} CacheTrendCounters;
```

The `NumOfCacheChecks` field contains the total number of times any block in the cache was looked at since the server was brought up.

The `NumOfCacheHits` field contains the number of times cache requests were serviced from existing cache blocks.

The `debugCounters` field contains an array of counters that are used by Novell for debugging.

The `LRUSittingTime` field contains the time in ticks that the oldest cache block has been available (sitting in the LRU list).

The CacheInformation structure is defined in NWSERVST.H as follows:

```
typedef struct {
   LONG MaximumByteCount;
   LONG   MinimumNumberOfCacheBuffers;
   LONG   MinimumCacheReportThreshold;
   LONG   AllocateWaitingCount;
   LONG   NDirtyBlocks;
   LONG   CacheDirtyWaitTime;
   LONG   CacheMaximumConcurrentWrites;
   LONG   MaximumDirtyTime;
   LONG   NumberOfDirectoryCacheBuffers;
   BYTE   CacheByteToBlockShiftFactor;
} CacheInformation;
```

The `MaximumByteCount` field contains the maximum length (in bytes) of a cache block.

The `MinimumNumberOfCacheBuffers` field contains the minimum number of cache buffers allowed on the server. This number can be set using the SET console command. Supported values are 20 to 1000; the default value is 20.

The `MinimumCacheReportThreshold` field contains the number of cache buffers used for the report threshold. When the cache buffers reach a number equal to the minimum number of cache buffers plus this report threshold, the server sends an alarm message warning that cache buffers are getting low. This number can be set using the SET console command. Supported values are 0 to 1000; the default value is 20.

The `AllocateWaitingCount` field contains the number of processes waiting to allocate a cache block.

The `NDirtyBlocks` field contains the number of dirty blocks waiting to write to disk.

The `CacheDirtyWaitTime` field contains the maximum wait before a write request is written to disk. This value can be set using the SET console command. Supported values are 0.1 seconds to 10 seconds; the default value is 3.3 seconds.

The `CacheMaximumConcurrentWrites` field contains the maximum number of write requests for changed file data that can be put in the elevator before the disk head begins a sweep across the disk. This value can be set using the SET console command. Supported values are 10 to 100; the default value is 50.

The `MaximumDirtyTime` field contains the longest time (in ticks) that a dirty block has waited before it was written to disk since the server was brought up.

The `NumberOfDirectoryCacheBuffers` field contains the number of directory cache buffers on the server.

The `CacheByteToBlockShiftFactor` field contains the factor used to determine the block size. Block size is calculated by the following equation, where n is the shift factor:

block size = 2^n bytes

SSGetCPUInfo

Returns information about the server CPU. For cross-platform functionality, use NWGetCPUInfo (page 53) instead.

Local Servers: blocking

Remote Servers: blocking

NetWare Server: 4.x, 5.x, 6.x

Platform: NLM

Service: Server-Based Server Environment

Syntax

```
#include <nit\nwservst.h>

LONG SSGetCPUInfo (
   LONG    CPUNumber,
   BYTE   *buffer,
   LONG    bufferLen);
```

Parameters

CPUNumber

   (IN) Specifies the number of the CPU to obtain information for (currently this number is always 0).

buffer

   (IN/OUT) Points to a buffer which receives CPU information.

bufferLen

   (IN) Specifies the size of `buffer`. This should be SS_DEFAULT_BUFFER_SIZE.

Return Values

ESUCCESS or NetWare errors.

Remarks

This function returns a GetCPUInfoStructure in `buffer`. This structure is defined in NWSERVST.H as follows:

```
typedef struct GetCPUInfoStructure
{
   LONG            currentServerTime;
   BYTE            vConsoleVersion;
   BYTE            vConsoleRevision;
   WORD            reserved;
   CPUInformation  CPUInfo;
```

```
    BYTE              variableStringsStart;
}GetCPUInfoStructure;
```

The `currentServerTime` field contains the time elapsed since the server was brought up. This time is returned in ticks (approximately 1/18 of a second). When this field reaches 0xFFFFFFFF, it wraps to zero.

The `vConsoleVersion` field contains the console version number. `vConsoleVersion` and `vConsoleRevision` track packet format.

The `vConsoleRevision` field contains the console version revision number.

The `CPUInfo` field contains a CPUInformation structure.

The `variableStringsStart` field contains the CPU string, the NPX present string, and the Bus string.

The `CPUInfo` field contains a CPUInformation structure. This structure is defined in NWSERVST.H as follows:

```
typedef struct {
    LONG   numberOfCPUs;
    LONG   PageTableOwnerFlag;
    LONG   CPUType;
    LONG   CoProcessorFlag;
    LONG   BusType;
    LONG   IOEngineFlag;
    LONG   FSEngineFlag;
    LONG   NonDedFlag;
} CPUInformation;
```

The `numberOfCPUs` field contains the number of registered CPUs in the server.

The `PageTableOwnerFlag` field indicates whether the NetWare OS owns the page table. Values for this flag include the following:

0-The NetWare OS owns the page tables
1-The NetWare OS does not own the page tables (currently, only when running with OS/2)

The `CPUType` field contains the CPU type.

The `CoProcessorFlag` field indicates whether a coprocessor is present.

The `BusType` field indicates the type of bus used:

0x01	microchannel
0x02	EISA
0x04	PCI
0x08	PCMCIA
0x10	ISA

More than one of the bit field can be set. Thus, for example, if PCI and ISA are both supported, the value in the `BusType` field is 0x14 (decimal 20).

The `IOEngineFlag` field indicates whether the IO engine is installed (TRUE = installed).

The `FSEngineFlag` field indicates whether the file system engine is installed (TRUE = installed).

The `NonDedFlag` currently is not supported. In the future, this field will indicate whether the CPU is dedicated to the NetWare OS. This flag is set when the CPU is nondedicated (currently, only when running OS/2).

The `PageTableOwnerFlag`, defined above, can be used to determine whether an NLM™ application is running under NetWare for OS/2 because this flag is 0 only under those circumstances.

SSGetDirCacheInfo

Returns information about the directory cache of a server. For cross-platform functionality, use NWGetDirCacheInfo (page 55) instead.

Local Servers: blocking

Remote Servers: blocking

NetWare Server: 4.x, 5.x, 6.x

Platform: NLM

Service: Server-Based Server Environment

Syntax

```
#include <nit\nwservst.h>

LONG SSGetDirCacheInfo (
   BYTE    *buffer,
   LONG     bufferLen);
```

Parameters

buffer

   (IN/OUT) Points to a buffer which receives directory cache information.

bufferLen

   (IN) Specifies the size of buffer. This should be the size of GetDirCacheInfoStructure.

Return Values

ESUCCESS or NetWare errors.

Remarks

This function returns information for the current connection. A GetDirCacheInfoStructure is returned in buffer. This structure is defined in NWSERVST.H as follows:

```
typedef struct GetDirCacheInfoStructure
{
   LONG                       currentServerTime;
   BYTE                       vConsoleVersion;
   BYTE                       vConsoleRevision;
   WORD                       reserved;
   DirectoryCacheInformation  dirCacheInfo;
}GetDirCacheInfoStructure;
```

The currentServerTime field contains the time elapsed since the server was brought up. This time is returned in ticks (approximately 1/18 of a second). When this field reaches 0xFFFFFFFF, it wraps to zero.

The vConsoleVersion field contains the console version number. vConsoleVersion and vConsoleRevision track packet format.

The vConsoleRevision field contains the console version revision number.

The dirCacheInfo field contains a DirectoryCacheInformation structure.

The DirectoryCacheInformation structure is defined in NWSERVST.H as follows:

```
typedef struct {
   LONG   MinimumTimeSinceFileDelete;
   LONG   AbsMinimumTimeSinceFileDelete;
   LONG   MinimumNumberOfDirCacheBuffers;
   LONG   MaximumNumberOfDirCacheBuffers;
   LONG   NumberOfDirectoryCacheBuffers;
   LONG   DCMinimumNonReferencedTime;
   LONG   DCWaitTimeBeforeNewBuffer;
   LONG   DCMaximumConcurrentWrites;
   LONG   DCDirtyWaitTime;
   LONG   debugCounters[4];
   LONG   PercentOfVolumeUsedByDirs;
} DirectoryCacheInformation;
```

The MinimumTimeSinceFileDelete field contains the minimum time (in ticks) between the deletion of a file and when it can be purged.

The AbsMinimumTimeSinceFileDelete field contains the minimum time (in ticks) between the deletion of a file and when it can be purged when the system has no available blocks.

The MinimumNumberOfDirCacheBuffers field contains the minimum number of directory cache buffers that can be allocated on the server. This number can be set using the SET console command. Supported values are 10 to 2000; the default value is 20.

The MaximumNumberOfDirCacheBuffers field contains the maximum number of directory cache buffers that can be allocated on the server. This number can be set using the SET console command. Supported values are 20 to 4000; the default value is 500.

The NumberOfDirectoryCacheBuffers field contains the current number of directory cache buffers on the server.

The DCMinimumNonReferencedTime field contains the time (in ticks) that must elapse between the last reference of a directory buffer and the time it is reused. This value can be set using the SET console command. Supported values are 1 second to 5 minutes; the default value is 5.5 seconds.

The DCWaitTimeBeforeNewBuffer field contains the time (in ticks) that must elapse before an additional directory cache buffer is allocated. This value can be set using the SET console command. Supported values are 0.5 seconds to 2 minutes; the default value is 2.2 seconds.

The DCMaximumConcurrentWrites field contains the maximum number of write requests from directory cache buffers that can be put in the elevator before they are written to disk. This value can be set using the SET console command. Supported values are 5 to 50; the default value is 10.

The `DCDirtyWaitTime` field contains the maximum time (in ticks) that the server can wait before writing dirty cache buffers to disk. This value can be set using the SET console command. Supported values are 0 to 10 seconds; the default value is 0.5 seconds.

The `debugCounters` field contains an array of counters used by Novell for debugging.

The `PercentOfVolumeUsedByDirs` field contains the maximum percentage of a volume that can be used by directories. This value can be set using the SET console command. Supported values are 5 to 50; the default value is 13.

SSGetFileServerInfo

Returns information about a server. For cross-platform functionality, use NWGetFileServerInfo (page 65) instead.

Local Servers: blocking

Remote Servers: blocking

NetWare Server: 4.x, 5.x, 6.x

Platform: NLM

Service: Server-Based Server Environment

Syntax

```
#include <nit\nwservst.h>

LONG SSGetFileServerInfo (
   BYTE   *buffer,
   LONG    bufferLen);
```

Parameters

buffer

   (IN/OUT) Points to a buffer which receives server information structures.

bufferLen

   (IN) Specifies the size of `buffer`. This should be the size of GetFileServerInfoStructure.

Return Values

ESUCCESS or NetWare errors.

Remarks

This function returns server information for the current connection.

NOTE: Prior to NetWare 5.1 SP 6 and NetWare 6 SP 3, the SSGetFileServerInfo function required the IPX protocol stack to be loaded on the server. With these service packs, IP-only servers return all information except the IPX-specific information. These fields (`NCPStaInUseCnt`, `NCPPeakStaInUse`, and `numOfNCPReqs`) always return 0.

This function returns the GetFileServerInfoStructure in `buffer`. This structure is defined in NWSERVST.H as follows:

```
typedef struct GetFileServerInfoStructure
{
   LONG              currentServerTime;
   BYTE              vConsoleVersion;
   BYTE              vConsoleRevision;
```

```
    WORD                reserved;
    LONG                NCPStaInUseCnt;
    LONG                NCPPeakStaInUse;
    LONG                numOfNCPReqs;
    LONG                serverUtilization;
    ServerInformation   serverInfo;
    FSCounters          fileServerCounters;
}GetFileServerInfoStructure;
```

The `currentServerTime` field contains the time elapsed since the server was brought up. This time is returned in ticks (approximately 1/18 of a second). When this field reaches 0xFFFFFFFF, it wraps to zero.

The `vConsoleVersion` field contains the console version number. `vConsoleVersion` and `vConsoleRevision` track packet format.

The `vConsoleRevision` field contains the console version revision number.

The `NCPStaInUseCnt` field contains the number of workstations connected to the server.

The `NCPPeakStaInUse` field contains the maximum number of workstations connected at one time since the server was brought up.

The `numOfNCPReqs` field contains the number of NCP™ requests received by the server since it was brought up.

The `serverUtilization` field contains the current percentage of CPU utilization for the server.

The `serverInfo` and `fileServerCounters` fields contain server statistics.

The ServerInformation structure is defined in NWSERVST.H as follows:

```
typedef struct {
    LONG   ReplyCanceledCount;
    LONG   WriteHeldOffCount;
    LONG   reserved1;
    LONG   InvalidRequestTypeCount;
    LONG   BeingAbortedCount;
    LONG   AlreadyDoingReAllocateCount;
    LONG   reserved2[3];
    LONG   DeAllocateStillTransmittingCount;
    LONG   StartStationErrorCount;
    LONG   InvalidSlotCount;
    LONG   BeingProcessedCount;
    LONG   ForgedPacketCount;
    LONG   StillTransmittingCount;
    LONG   ReExecuteRequestCount;
    LONG   InvalidSequenceNumberCount;
    LONG   DuplicateIsBeingSentAlreadyCount;
    LONG   SentPositiveAcknowledgeCount;
    LONG   SentADuplicateReplyCount;
    LONG   NoMemoryForStationControlCount;
    LONG   NoAvailableConnectionsCount;
    LONG   ReAllocateSlotCount;
    LONG   ReAllocateSlotCameTooSoonCount;
} ServerInformation;
```

The `ReplyCanceledCount` field contains the number of replies that were cancelled because the connection was reallocated while the request was being processed.

The `WriteHeldOffCount` field contains the number of times that writes were delayed because of a pending TTS™ transaction or cache busy condition.

The `InvalidRequestTypeCount` field contains the number of packets received which had an invalid request type or were received after the server was downed.

The `BeingAbortedCount` field contains the number of packets received for a connection that was being terminated.

The `AlreadyDoingReAllocateCount` field contains the number of times that a connection is requested when a connection already exists.

The `DeAllocateInvalidSlotCount` field contains the number of times an attempt was made to deallocate a connection slot which was not valid.

The `StartStationErrorCount` field contains the number of times the server was unable to allocate a connection for whatever reason.

The `InvalidSlotCount` field contains the number of requests received for an invalid connection slot.

The `BeingProcessedCount` field contains the number of times a duplicate request was received during processing of the first request.

The `ForgedPacketCount` field contains the number of suspicious invalid packets received. It is rarely possible to create such packets because of faulty equipment. If this number is large, it might indicate an attempt to breach network security.

The `StillTransmittingCount` field contains the number of times a new request is received before a reply to a previous request has been sent.

The `ReExecuteRequestCount` field contains the number of times the requester did not receive the reply and the request had to be reprocessed.

The `InvalidSequenceNumberCount` field contains the number of request packets the server received from a connection where the sequence number in the packet did not match the current sequence number or the next sequence number. (Packets with bad sequence numbers are discarded). If this number is large, it might indicate an attempt to breach network security.

The `DuplicateIsBeingSentAlreadyCount` field contains the number of times a duplicate reply was requested when the reply had already been sent.

The `SentPositiveAcknowledgeCount` field contains the number of acknowledgments sent by the server. An acknowledgment is sent when a connection repeats a request that is being serviced.

The `SentADuplicateReplyCount` field contains the number of request packets for which the server had to send a duplicate reply. (Duplicate replies are only sent for requests the server cannot process.)

The `NoMemoryForStationControlCount` field contains the number of times that the server could not allocate memory to expand the connection table for a new connection.

The `NoAvailableConnectionsCount` field contains the number of times there were no slots available in the connection table for a new connection.

The `ReAllocateSlotCount` field contains the number of times the server reallocated the same slot in the connection table for a client that logged out and then re-logged in.

The `ReAllocateSlotCameTooSoonCount` field contains the number of times that a request came from a client to re-log in before that client had been completely logged out.

The FSCounters structure is defined in NWSERVST.H as follows:

```
typedef struct {
   WORD    TooManyHops;
   WORD    UnknownNetwork;
   WORD    NoSpaceForService;
   WORD    NoRecieveBuffers;
   WORD    NotMyNetwork;
   LONG    NetBIOSProgatedCount;
   LONG    TotalPacketsServiced;
   LONG    TotalPacketsRouted;
} FSCounters;
```

The `TooManyHops` field contains the number of packets that were discarded because they had passed through more than 16 bridges without reaching their destination.

The `UnknownNetwork` field contains the number of packets that were discarded because their destination network was unknown to the server.

The `NoSpaceForService` field is always set to 0 (currently).

The `NoRecieveBuffers` field contains the number of times a packet was discarded because there were no buffers to receive it.

The `NotMyNetwork` field contains the number of packets received that were not destined for the server.

The `NetBIOSPropagatedCount` field contains the number of NetBIOS packets received that were sent forward.

The `TotalPacketsServiced` field contains the total packets received by the server.

The `TotalPacketsRouted` field contains the number of all packets forwarded by the server.

SSGetFileSystemInfo

Returns information about a server's file system.

Local Servers: blocking

Remote Servers: blocking

NetWare Server: 4.x, 5.x, 6.x

Platform: NLM

Service: Server-Based Server Environment

Syntax

```
#include <nit\nwservst.h>

LONG SSGetFileSystemInfo (
   LONG   fileSystemID,
   BYTE  *buffer,
   LONG   bufferLen);
```

Parameters

fileSystemID

> (IN) Specifies the ID number of the file system for which to return information. Currently this value is always 1 (for 386).

buffer

> (IN/OUT) Points to a buffer which receives file system information.

bufferLen

> (IN) Specifies the size of `buffer`. This should be the size of GetFileSystemInfoStructure.

Return Values

ESUCCESS or NetWare errors.

Remarks

This function returns file system information for the file system specified by `fileSystemID`. Although none of the information currently returned by this function is useful to a developer, this function has been included in the documentation for future use.

This function returns a GetFileSystemInfoStructure in `buffer`. This structure is defined in NWSERVST.H as follows:

```
typedef struct GetFileSystemInfoStructure
{
   LONG   currentServerTime;
   BYTE   vConsoleVersion;
```

```
    BYTE    vConsoleRevision;
    WORD    reserved;
    LONG    debugCounters[13];
}GetFileSystemInfoStructure;
```

The `currentServerTime` field contains the time elapsed since the server was brought up. This time is returned in ticks (approximately 1/18 of a second). When this field reaches 0xFFFFFFFF, it wraps to zero.

The `vConsoleVersion` field contains the console version number. `vConsoleVersion` and `vConsoleRevision` track packet format.

The `vConsoleRevision` field contains the console version revision number.

The `debugCounters` field contains an array of counters that deal with the background FAT update process. These counters are used by Novell for debugging.

SSGetGarbageCollectionInfo

Returns information about garbage collection on a server. For cross-platform functionality, use NWGetGarbageCollectionInfo (page 79) instead.

Local Servers: blocking

Remote Servers: blocking

NetWare Server: 4.x, 5.x, 6.x

Platform: NLM

Service: Server-Based Server Environment

Syntax

```
#include <nit\nwservst.h>

LONG SSGetGarbageCollectionInfo (
   BYTE   *buffer,
   LONG   bufferLen);
```

Parameters

buffer

   (IN/OUT) Points to a buffer which receives garbage collection information.

bufferLen

   (IN) Specifies the size of buffer. This should be the size of GetGarbageCollInfoStruc.

Return Values

ESUCCESS or NetWare errors.

Remarks

This function returns a GetGarbageCollInfoStructure in buffer. This structure is defined in NWSERVST.H as follows:

```
typedef struct GetGarbageCollInfoStructure
{
   LONG   currentServerTime;
   BYTE   vConsoleVersion;
   BYTE   vConsoleRevision;
   WORD   reserved;
   LONG   failedAllocReqCount;
   LONG   numberOfAllocs;
   LONG   noMoreMemAvlCnt;
   LONG   numOfGarbageColl;
   LONG   foundSomeMem;
```

```
    LONG    numOfChecks;
}GetGarbageCollInfoStruc;
```

The `currentServerTime` field contains the time elapsed since the server was brought up. This time is returned in ticks (approximately 1/18 of a second). When this field reaches 0xFFFFFFFF, it wraps to zero.

The `vConsoleVersion` field contains the console version number. `vConsoleVersion` and `vConsoleRevision` track packet format.

The `vConsoleRevision` field contains the console version revision number.

The `failedAllocReqCount` field contains the number of times memory allocation failed since the server was brought up.

The `numberOfAllocs` field contains the number of memory allocations made since the server was brought up.

The `noMoreMemAvlCnt` field contains the number of times that allocation failed because there was no memory available since the server was brought up.

The `numOfGarbageColl` field contains the number of times garbage collection was invoked since the server was brought up.

The `foundSomeMem` field contains the number of times garbage collection reclaimed memory.

The `numOfChecks` field contains the number of times garbage collection checked for memory since the server was brought up.

SSGetIPXSPXInfo

Returns information about IPX™ / SPX™ use on a server. For cross-platform functionality, use NWGetIPXSPXInfo (page 83) instead.

Local Servers: blocking

Remote Servers: blocking

NetWare Server: 4.x, 5.x, 6.x

Platform: NLM

Service: Server-Based Server Environment

Syntax

```
#include <nit\nwservst.h>

LONG SSGetIPXSPXInfo (
   BYTE   *buffer,
   LONG    bufferLen);
```

Parameters

buffer

   (IN/OUT) Points to a buffer which receives IPX and SPX information.

bufferLen

   (IN) Specifies the size of `buffer`. This should be the size of GetIPXSPXInfoStructure.

Return Values

ESUCCESS or NetWare errors.

Remarks

This function returns a GetIPXSPXInfoStructure in `buffer`. This structure is defined in NWSERVST.H as follows:

```
typedef struct GetIPXSPXInfoStructure
{
   LONG             currentServerTime;
   BYTE             vConsoleVersion;
   BYTE             vConsoleRevision;
   WORD             reserved;
   IPXInformation   IPXInfo;
   SPXInformation   SPXInfo;
}GetIPXSPXInfoStructure;
```

The `currentServerTime` field contains the time elapsed since the server was brought up. This time is returned in ticks (approximately 1/18 of a second). When this field reaches 0xFFFFFFFF, it wraps to zero.

The `vConsoleVersion` field contains the console version number. `vConsoleVersion` and `vConsoleRevision` track packet format.

The `vConsoleRevision` field contains the console version revision number.

The `IPXInfo` field contains a IPXInformation structure. This structure is defined in NWSERVST.H as follows:

```
typedef struct {
   LONG   IpxSendPacketCount;
   WORD   IpxMalformPacketCount;
   LONG   IpxGetECBRequestCount;
   LONG   IpxGetECBFailCount;
   LONG   IpxAESEventCount;
   WORD   IpxPostponedAESCount;
   WORD   IpxMaxConfiguredSocketCount;
   WORD   IpxMaxOpenSocketCount;
   WORD   IpxOpensocketFailCount;
   LONG   IpxListenECBCount;
   WORD   IpxECBCancelFailCount;
   WORD   IpxGetLocalTargetFailCount;
} IPXInformation;
```

The `IpxSendPacketCount` field contains the number of IPX packets sent by the server.

The `IpxMalformPacketCount` field contains the number of IPX packets discarded because they were malformed.

The `IpxGetECBRequestCount` field contains the number of ECB requests.

The `IpxGetECBFailCount` field contains the number of times an ECB was requested but could not be supplied.

The `IpxAESEventCount` field contains the number of AES events scheduled.

The `IpxPostponedAESCount` field contains the number of AES events that could not be scheduled and were placed in a waiting list.

The `IpxMaxConfiguredSocketCount` field contains the maximum number of sockets that can be open at one time.

The `IpxMaxOpenSocketCount` field contains the maximum number of sockets open at one time since the server was brought up.

The `IpxOpensocketFailCount` field contains the number of times a request to open a socket failed.

The `IpxListenECBCount` field contains the number of ECBs listening for a packet.

The `IpxECBCancelFailCount` field contains the number of ECB listens that were cancelled.

The `IpxGetLocalTargetFailCount` field contains the number of times that the server failed to find the target.

The `SPXInfo` field contains a SPXInformation structure. This structure is defined in NWSERVST.H as follows:

```
typedef struct {
   WORD    SpxMaxConnectionsCount;
   WORD    SpxMaxUsedConnections;
   WORD    SpxEstConnectionReq;
   WORD    SpxEstConnectionFail;
   WORD    SpxListenConnectReq;
   WORD    SpxListenConnectFail;
   LONG    SpxSendCount;
   LONG    SpxWindowChokeCount;
   WORD    SpxBadSendCount;
   WORD    SpxSendFailCount;
   WORD    SpxAbortedConnection;
   LONG    SpxListenPacketCount;
   WORD    SpxBadListenCount;
   LONG    SpxIncomingPacketCount;
   WORD    SpxBadInPacketCnt;
   WORD    SpxSuppressedPackCnt;
   WORD    SpxNoSesListenECBCnt;
   WORD    SpxWatchDogDestSesCnt;
} SPXInformation;
```

The `SpxMaxConnectionsCount` field contains the maximum number of SPX connections allowed on the server.

The `SpxMaxUsedConnections` field contains the maximum number of SPX connections used at one time since the server was brought up.

The `SpxEstConnectionReq` field contains total number of SPX connections established since the server was brought up.

The `SpxEstConnectionFail` field contains number of times that an attempt to establish an SPX connection failed since the server was brought up.

The `SpxListenConnectReq` field contains the number of requests to post a listen since the server was brought up.

The `SpxListenConnectFail` field contains the number of times a request to post a listen failed since the server was brought up.

The `SpxSendCount` field contains the number of SPX packets sent since the server was brought up.

The `SpxWindowChokeCount` field contains a value used internally for debugging.

The `SpxBadSendCount` field contains the number of bad packets sent since the server was brought up.

The `SpxSendFailCount` field contains the number of packets sent for which no acknowledgment was received since the server was brought up.

The `SpxAbortedConnection` field contains the number of times a connection was aborted since the server was brought up.

The `SpxListenPacketCount` field contains the number of times a listen was posted on a socket since the server was brought up.

The `SpxBadListenCount` field contains the number of times a listen on a socket failed for whatever reason (for example, it was cancelled) since the server was brought up.

The `SpxIncomingPacketCount` field contains the number of packets in the queue.

The `SpxBadInPacketCnt` field contains the number of bad SPX packets received since the server was brought up.

The `SpxSuppressedPackCnt` field contains the number of times a duplicate SPX packet was received.

The `SpxNoSesListenECBCnt` field contains the number of times a listen was posted on a session that was not established since the server was brought up.

The `SpxWatchDogDestSesCnt` field contains the number of times the watchdog destroyed a session since the server was brought up.

SSGetKnownNetworksInfo

Returns information about known networks. For cross-platform functionality, use NWGetKnownNetworksInfo (page 85) instead.

Local Servers: blocking

Remote Servers: blocking

NetWare Server: 4.x, 5.x, 6.x

Platform: NLM

Service: Server-Based Server Environment

Syntax

```
#include <nit\nwservst.h>

LONG SSGetKnownNetworksInfo (
   LONG   startNumber,
   BYTE  *buffer,
   LONG   bufferLen);
```

Parameters

startNumber

   (IN) Specifies the number to start with.

buffer

   (IN/OUT) Points to a buffer which receives a information about known networks.

bufferLen

   (IN) Specifies the size of buffer. This should be SS_DEFAULT_BUFFER_SIZE.

Return Values

ESUCCESS or NetWare errors.

Remarks

This function returns a GetKnownNetworksStructure in buffer. This structure is defined in NWSERVST.H as follows:

```
typedef struct GetKnownNetworksStructure
{
   LONG                  currentServerTime;
   BYTE                  vConsoleVersion;
   BYTE                  vConsoleRevision;
   WORD                  reserved;
   LONG                  numberOfEntries;
```

```
    KnownNetworksStructure  info;
}GetKnownNetworksStructure;
```

The `currentServerTime` field contains the time elapsed since the server was brought up. This time is returned in ticks (approximately 1/18 of a second). When this field reaches 0xFFFFFFFF, it wraps to zero.

The `vConsoleVersion` field contains the console version number. `vConsoleVersion` and `vConsoleRevision` track packet format.

The `vConsoleRevision` field contains the console version revision number.

The `numberOfEntries` field contains the number of structures in the buffer

The `info` field contains the first KnownNetworkStructure.

The KnownNetworkStructure is defined in NWSERVST.H as follows:

```
typedef struct KnownNetworksStructure
{
   LONG   netIDNumber;
   WORD   hopsToNet;
   WORD   netStatus;
   WORD   timeToNet;
}KnownNetworksStructure;
```

The `netIDNumber` field contains the network ID number.

The `hopsToNet` field contains the number of hops to the network from the server.

The `netStatus` field indicates the status of the network.

The `timeToNet` field contains the time in ticks to the network (round-trip).

SSGetKnownServersInfo

Returns information about known servers. For cross-platform functionality, use NWGetKnownServersInfo (page 87) instead.

Local Servers: blocking

Remote Servers: blocking

NetWare Server: 4.x, 5.x, 6.x

Platform: NLM

Service: Server-Based Server Environment

Syntax

```
#include <nit\nwservst.h>

LONG SSGetKnownServersInfo (
   LONG    startNumber,
   LONG    serverType,
   BYTE    *buffer,
   LONG    bufferLen);
```

Parameters

`startNumber`

   (IN) Specifies the number of the server to start with.

`serverType`

   (IN) Specifies the type of server to return information for.

`buffer`

   (IN/OUT) Points to a buffer which receives a information about protocol configuration of the server.

`bufferLen`

   (IN) Specifies the size of `buffer`. This should be SS_DEFAULT_BUFFER_SIZE.

Return Values

ESUCCESS or NetWare errors.

Remarks

This function returns a GetKnownServerInfoStructure in `buffer`. This structure is defined in NWSERVST.H as follows:

```
typedef struct GetKnownServersInfoStructure
{
   LONG                     currentServerTime;
```

```
   BYTE                    vConsoleVersion;
   BYTE                    vConsoleRevision;
   WORD                    reserved;
   LONG                    numberOfEntries;
   KnownServerStructure    info;
}GetKnownServersInfoStructure;
```

The `currentServerTime` field contains the time elapsed since the server was brought up. This time is returned in ticks (approximately 1/18 of a second). When this field reaches 0xFFFFFFFF, it wraps to zero.

The `vConsoleVersion` field contains the console version number. `vConsoleVersion` and `vConsoleRevision` track packet format.

The `vConsoleRevision` field contains the console version revision number.

The `numberOfEntries` field contains the number of structures in the buffer.

The `info` field contains the first KnownServerStructure in the buffer. More follow.

```
typedef struct KnownServerStructure
{
   BYTE   serverAddress[12];
   WORD   hopCount;
   BYTE   name;
}KnownServerStructure;
```

The `serverAddress` field contains the node address of the known server.

The `hopCount` field contains the number of hops to the server.

The `name` field contains the first byte of the server name.

11.4 SSGetL*-SSGetN* Functions

Click on any function name in the table of contents to view the purpose, syntax, parameters, and return values for that function.

- "SSGetNLMLoadedList" on page 552
- "SSGetNLMResourceTagList" on page 554

SSGetLANCommonCounters

Returns common statistics for a LAN board. For cross-platform functionality, use NWGetLANCommonCountersInfo (page 89) instead.

Local Servers: blocking

Remote Servers: blocking

NetWare Server: 4.x, 5.x, 6.x

Platform: NLM

Service: Server-Based Server Environment

Syntax

```
#include <nit\nwservst.h>

LONG SSGetLANCommonCounters (
    LONG     boardNumber,
    LONG     blockNumber,
    BYTE    *buffer,
    LONG     bufferLen);
```

Parameters

boardNumber

   (IN) Specifies the board number of the LAN board for which you want information.

blockNumber

   (IN) Specifies the block number to start with. On the first call to this function this value should be 0. On subsequent calls this value should be the value that is returned in the `nextCntBlock` field of the GetLANCommonCountersStructure returned by this function.

buffer

   (IN/OUT) Points to a buffer which receives a GetLANCommonCountersStructure.

bufferLen

   (IN) Specifies the size of `buffer`. This should be the size of GetLANCommonCountersStructure.

Return Values

ESUCCESS or NetWare errors.

Remarks

This function returns a GetLANCommonCountersStructure in `buffer`. This structure is defined in NWSERVST.H as follows:

```
typedef struct GetLANCommonCountersStructure
{
   LONG                 currentServerTime;
   BYTE                 vConsoleVersion;
   BYTE                 vConsoleRevision;
   BYTE                 statMajorVersion;
   BYTE                 statMinorVersion;
   LONG                 totalCommonCnts;
   LONG                 totalCntBlocks;
   LONG                 customCounters;
   LONG                 nextCntBlock;
   CommonLANStructure   info;
}GetLANCommonCountersStructure;
```

The `currentServerTime` field contains the time elapsed since the server was brought up. This time is returned in ticks (approximately 1/18 of a second). When this field reaches 0xFFFFFFFF, it wraps to zero.

The `vConsoleVersion` field contains the console version number. `vConsoleVersion` and `vConsoleRevision` track packet format.

The `vConsoleRevision` field contains the console version revision number.

The `statMajorVersion` field contains the major version number of the generic portion of the statistics table (defined by Novell).

The `statMinorVersion` field contains the minor version number of the generic portion of the statistics table (defined by Novell).

The `totalCommonCnts` field contains the number of LAN common counters.

The `totalCntBlocks` field contains the total number of blocks used by LAN common counters for the specified LAN board.

The `customCounters` field contains the number of LAN custom counters.

The `nextCntBlock` field contains the value to be passed in `blockNumber` on the next call to this function. When 0 is returned in this field, all common counters have been returned.

The `info` field contains a CommonLANStructure.

The CommonLANStructure is defined in NWSERVST.H as follows:

```
typedef struct CommonLANStructure
{
   LONG   notSupportedMask;
   LONG   TotalTxPacketCount;
   LONG   TotalRxPacketCount;
   LONG   NoECBAvailableCount;
   LONG   PacketTxTooBigCount;
   LONG   PacketTxTooSmallCount;
   LONG   PacketRxOverflowCount;
   LONG   PacketRxTooBigCount;
   LONG   PacketRxTooSmallCount;
   LONG   PacketTxMiscErrorCount;
   LONG   PacketRxMiscErrorCount;
```

```
    LONG    RetryTxCount;
    LONG    ChecksumErrorCount;
    LONG    HardwareRxMismatchCount;
}CommonLANStructure;
```

The `notSupportedMask` field indicates if the counter is supported. If the bit is 0, the counter is supported; if it is 1, the counter is not supported.

The `TotalTxPacketCount` field contains the total number of packets transmitted by the LAN board.

The `TotalRxPacketCount` field contains the total number of packets that were received by the LAN board.

The `NoECBAvailableCount` field contains the number of times the LAN board failed to get a receive ECB.

The `PacketTxTooBigCount` field contains the number of times the send packet was too big for this LAN board to send.

The `PacketTxTooSmallCount` field contains the number of times the send packet was too small for this LAN board to send.

The `PacketRxOverflowCount` field contains the number of times the LAN board's receive buffers overflowed.

The `PacketRxTooBigCount` field contains the number of times this LAN board could not receive a packet because the packet was too big.

The `PacketRxTooSmallCount` field contains the number of times this LAN board could not receive a packet because the packet was too small.

The `PacketTxMiscErrorCount` field contains the number of times any kind of transmit error occurred for the LAN board.

The `PacketRxMiscErrorCount` field contains the number of times any kind of receive error occurred for the LAN board.

The `RetryTxCount` field contains the number of times the LAN board retried a transmit because of failure.

The `ChecksumErrorCount` field contains the number of times a checksum error occurred for the LAN board.

The `HardwareRxMismatchCount` field contains a counter which can be incremented when a packet is received which does not pass length consistency checks (currently used only by the Ethernet TSU).

SSGetLANConfiguration

Returns information about the configuration of LAN drivers on a server. For cross-platform functionality, use NWGetLANConfigInfo (page 91) instead.

Local Servers: blocking

Remote Servers: blocking

NetWare Server: 4.x, 5.x, 6.x

Platform: NLM

Service: Server-Based Server Environment

Syntax

```
#include <nit\nwservst.h>

LONG SSGetLANConfiguration (
   LONG     boardNumber,
   BYTE    *buffer,
   LONG     bufferLen);
```

Parameters

boardNumber

   (IN) Specifies the number (1-255) of the logical LAN board to obtain information for. The value must not be zero.

buffer

   (IN/OUT) Points to a buffer which receives a LAN driver configuration information.

bufferLen

   (IN) Specifies the size of `buffer`. This should be the size of GetLANConfigInfoStructure.

Return Values

ESUCCESS or NetWare errors.

Remarks

This function returns a GetLANConfigInfoStructure in `buffer`. This structure is defined in NWSERVST.H as follows:

```
typedef struct GetLANConfigInfoStructure
{
   LONG                    currentServerTime;
   BYTE                    vConsoleVersion;
   BYTE                    vConsoleRevision;
   WORD                    reserved;
```

```
        DriverConfigStructure   LANConfig;
}GetLANConfigInfoStructure;
```

The `currentServerTime` field contains the time elapsed since the server was brought up. This time is returned in ticks (approximately 1/18 of a second). When this field reaches 0xFFFFFFFF, it wraps to zero.

The `vConsoleVersion` field contains the console version number. `vConsoleVersion` and `vConsoleRevision` track packet format.

The `vConsoleRevision` field contains the console version revision number.

The `LANConfig` field contains a DriverConfigStructure.

The DriverConfigStructure is defined in NWSERVST.H as follows:

```
typedef struct {
   BYTE    DriverCFG_MajorVersion;
   BYTE    DriverCFG_MinorVersion;
   BYTE    DriverNodeAddress[6];
   WORD    DriverModeFlags;
   WORD    DriverBoardNumber;
   WORD    DriverBoardInstance;
   LONG    DriverMaximumSize;
   LONG    DriverMaxRecvSize;
   LONG    DriverRecvSize;
   LONG    DriverCardName;
   LONG    DriverShortName;
   LONG    DriverMediaType;
   WORD    DriverCardID;
   WORD    DriverMediaID;
   WORD    DriverTransportTime;
   BYTE    DriverReserved[16];
   BYTE    DriverMajorVersion;
   BYTE    DriverMinorVersion;
   WORD    DriverFlags;
   WORD    DriverSendRetries;
   LONG    DriverLink;
   WORD    DriverSharingFlags;
   WORD    DriverSlot;
   WORD    DriverIOPortsAndLengths[4];
   LONG    DriverMemoryDecode0;
   WORD    DriverLength0;
   LONG    DriverMemoryDecode1;
   WORD    DriverLength1;
   BYTE    DriverInterrupt[2];
   BYTE    DriverDMAUsage[2];
   LONG    DriverResourceTag;
   LONG    DriverConfig;
   LONG    DriverCommandString;
   BYTE    DriverLogicalName[18];
   LONG    DriverLinearMemory[2];
   WORD    DriverChannelNumber;
   BYTE    DriverIOReserved[6];
} DriverConfigStructure;
```

The `DriverCFG_MajorVersion` field contains the Novell defined major version number of the configuration table.

The `DriverCFG_MinorVersion` field contains the Novell defined minor version of the configuration table.

The `DriverNodeAddress` field contains the node address of the LAN board.

The `DriverModeFlags` field contains the modes supported by the driver. The bits are defined as follows:

0	Set to 1. At one time this bit indicated whether the driver was a real or dummy driver.
1	Set if the driver uses DMA. However, the buffers are not guaranteed to be on a 64K boundary.
2	Set only if bit 4 is set. This bit tells routers to only pass router table changes when they occur, rather than forwarding all RIP and SAP packets.
3	Set if the driver supports multicasting.
4	"Point-to-point bit": Set if the driver can bind with a protocol stack without providing a network number.
6	Set if the driver supports raw sends. If the LSL hands a "raw" packet to an MLID, the MLID should send the packet without prepending any hardware header (the protocol stack prepares the packet).
10	Set if the HSM can handle framented RCBs.
13	Set if the HSM can handle promiscuous RCBs.
14-15	Bits 14 and 15 combine to describe the `DriverNodeAddress` (see the following table).

Bits 14 and 15 in `DriverModeFlags` describe the format of `DriverNodeAddress`. The combinations are as follow:

00	Format is unspecified-The node address is assumed to be in the physical layer's native format
01	This is an illegal combination and should not occur
10	DriverNodeAddress is canonical
11	DriverNodeAddress is non-canonical

The `DriverBoardNumber` field contains the logical board number (1 - 255) assigned to the LAN board by the L ink Support Layer™ (LSL™) software.

WARNING: If the value of `DriverBoardNumber` is zero at the time SSGetLANConfugration is called, the function never returns.

The `DriverBoardInstance` field contains the number of the physical card that the logical board is using. If a driver is driving one physical card, all the logical boards using this card would have a value of 1 in this field. If a second physical card is added, all the logical boards using the second physical card would have a value of 2 in this field.

The `DriverMaximumSize` field contains the maximum send or receive packet size (in bytes) that the LAN board can transmit or receive.

The `DriverMaxRecvSize` field contains the maximum packet size (or best size) in bytes that the LAN board can receive.

The `DriverRecvSize` field contains the maximum packet size (in bytes) a protocol stack can send or receive using this board.

The `DriverCardName` field contains a pointer to a length-preceded, zero-terminated ASCII description string that is contained in the OSDATA segment and is similar to the description string in the definition table. For example, "NE2000 ETHERNET Driver".

The `DriverShortName` field contains a pointer to a length-preceded, zero-terminated ASCII string that describes the LAN board in eight bytes or less, such as "NE2000".

The `DriverMediaType` field contains a pointer to a length-preceded, zero-terminated string that describes the frame type of the Multiple Link Interface Driver™ (MLID™) software (for example, "ETHERNET_802.3"). The Independent Manufacturer Support Program (IMSP) assigns strings for the frame type. The following table summarizes frame types currently defined by Novell with their corresponding protocol ID numbers for IPX.

Frame ID	Frame Type String	Protocol ID on IPX/ SPX	Description
0	VIRTUAL_LAN	00h	For use where no Frame ID/MAC envelope is necessary
1	LOCALTALK	00h	Apple LocalTalk* frame
2	ETHERNET_II	8137h	Ethernet using a DEC* Ethernet II envelope
3	ETHERNET_802.2	E0h	Ethernet (802.3) using an 802.2 envelope
4	TOKEN-RING	E0h	Token ring (802.5) using an 802.2 envelope
5	ETHERNET_802.3	00h	IPX 802.3 raw encapsulation
6	802.4	N/A	Token-passing bus envelope
7	NOVELL_PCN2	1111h	Novell's IBM* PC Network II envelope
8	GNET	E0h	Gateway's GNET frame envelope
9	PRONET-10	N/A	Proteon's* ProNET* I/O frame envelope
10	ETHERNET_SNAP	8137h	Ethernet (802.3) using an 802.2 envelope with SNAP
11	TOKEN-RING_SNAP	8137h	Token ring (802.5) using an 802.2 envelope with SNAP
12	LANPAC_II	N/A	Racore's frame envelope
13	ISDN	N/A	Integrated Services Digital Network
14	NOVELL_RX-NET	FAh	Novell's ArcNet 68™ envelope
15	IBM_PCN2_802.2	E0h	IBM PCN2 using 802.2 envelope
16	IBM_PCN2_SNAP	8137h	IBM PCN2 using 802.2 with SNAP envelope

Frame ID	Frame Type String	Protocol ID on IPX/ SPX	Description
17	OMNINET/4	N/A	Corvus's frame envelope
18	3270_COAXA	N/A	Harris Adacom's frame envelope
19	IP	N/A	IP Tunnel frame envelope
20	FDDI_802.2	E0h	FDDI (802.7) using an 802.2 envelope
21	IVDLAN_802.9	N/A	Commtex, Inc.'s frame envelope
22	DATACO_OSI	N/A	Dataco's frame envelope
23	FDDI_SNAP	8137h	FDDI (802.7) using 802.2 with a SNAP envelope
24	IBM_SDLC	N/A	SDLC tunnel envelope
25	PCO_FDDITP	N/A	PC Office frame envelope
26	WAIDNET	N/A	Hypercommunications
27	SLIP	N/A	Novell frame envelope
28	PPP	N/A	Novell frame envelope

The `DriverCardID` field contains the number assigned to the LAN board by the IMSP.

The `DriverMediaID` field contains a number identifying the link-level envelope (frame ID) used by the MLID. The above table lists defined ID numbers.

The `DriverTransportTime` field contains the time (in ticks) that it takes for the LAN board to transmit a 576-byte packet.

The `DriverReserved` field is reserved for future use (currently set to 0).

The `DriverMajorVersion` field contains the major version number of the MLID.

The `DriverMinorVersion` field contains the minor version number of the MLID.

The `DriverFlags` field contains a bit map indicating the architecture supported by the MLID:

0 Supports an EISA board
1 Supports an ISA board
2 Supports an MCA board
8 Supports HUB management
9-10 Bits 9 and 10 combine to indicate different support mechanisms for multicast filtering and multicast formats (see the following table)

Bits 9 and 10 in `DriverFlags` indicate different support mechanisms for multicast filtering and format. The combinations are as follow:

00	The method used for group addressing support defaults to that of the LAN medium. For example, for Ethernet it is the Hash Table; for Token Ring it is the Functional Address.
01	This is an illegal combination and should not occur

10	Group addressing is supported by a specialized adapter, but the Topology Specific Module™ (TSM™) software should filter the addresses.
11	Group addressing is supported by a specialized adapter, and TSM checking is not required.

The `DriverSendRetries` field contains the number of times that the MLID retries send events before aborting the send.

The `DriverLink` field is used by the LSL.

The `DriverSharingFlags` field contains a bit map defining the sharing abilities of the MLID:

0 Set if the LAN board is currently shut down

1 Set if the LAN board can share the primary I/O port

2 Set if the LAN board can share the secondary I/O port

3 Set if the LAN board can share the primary memory range

4 Set if the LAN board can share the secondary memory range

5 Set if the LAN board can share the primary interrupt

6 Set if the LAN board can share the secondary interrupt

7 Set if the LAN board can share DMA channel 0

8 Set if the LAN board can share DMA channel 1

9 Set if there is a command line ifnormation string to place in the AUTOEXEC.NCF file, which is the string that `DriverCommandString` points to

10 This bit is set to prevent default information from being placed into the AUTOEXEC.NCF file when option information is entered on the command line. Setting this bit overrides the setting of bit 9.

The `DriverSlot` field contains the slot number where the LAN board is installed if the board is running in an MCA or EISA machine. Otherwise, this field is 0.

The `DriverIOPortsAndLengths` field contains I/O port information as follows:

1st WORD	The primary base I/O port for the LAN board
2nd WORD	The number of I/O ports beginning with the primary base I/O port
3rd WORD	The secondary base I/O port for the LAN board
4th WORD	The number of I/O ports beginning with the secondary base I/O port

The `DriverMemoryDecode0` field contains the absolute primary memory address that the LAN board uses (if not used, this field is 0).

The `DriverLength0` field contains the amount of memory (in paragraphs) that the LAN board uses, starting at `DriverMemoryDecode0` (if not used, this field is 0).

The `DriverMemoryDecode1` field contains the absolute secondary memory address that the LAN board uses (if not used, this field is 0).

The `DriverLength1` field contains the amount of memory (in paragraphs) that the LAN board uses, starting at `DriverMemoryDecode0` (if not used, this field is 0).

The first byte in the `DriverInterrupt` field contains the primary interrupt vector number. The second byte in this field contains the secondary interrupt vector number. FFh = not used.

The first byte in the `DriverDMAUsage` field contains the primary DMA channel used by the LAN board. The second byte in this field contains the secondary DMA channel used by the LAN board. FFh = not used.

The `DriverResourceTag` field contains a pointer to the IOResourceTag obtained by the driver.

The `DriverConfig` field contains a pointer to the LSL copy of the configuration structure (used by the LSL).

The `DriverCommandString` field contains a long pointer to a new or additional command line string if the driver needs to append something to the command line or replace the default command line in the AUTOEXEC.NCF file. If the driver does not use this option, this field is 0.

The `DriverLogicalName` field contains the logical name of the LAN driver (given at load time).

The `DriverLinearMemory` field contains the addresses of `DriverMemoryDecode0` and `DriverMemoryDecode1`. The first LONG contains the linear address of `DriverMemoryDecode0`. The second LONG contains the linear address of `DriverMemoryDecode1`.

The `DriverChannelNumber` field is used for multichannel adapters. It holds the channel number of the NIC to use. The channel number can be specified when a driver is loaded using the "channel=#" keyword (where # is any number greater than 0).

The `DriverIOReserved` field is reserved for the LSL.

SSGetLANCustomCounters

Returns custom statistics for a LAN board. For cross-platform functionality, use NWGetLANCustomCountersInfo (page 93) instead.

Local Servers: blocking

Remote Servers: blocking

NetWare Server: 4.x, 5.x, 6.x

Platform: NLM

Service: Server-Based Server Environment

Syntax

```
#include <nit\nwservst.h>

LONG SSGetLANCustomCounters (
   LONG    boardNumber,
   LONG    startNumber,
   BYTE   *buffer,
   LONG    bufferLen);
```

Parameters

boardNumber

   (IN) Specifies the board number of the LAN board to return counters for.

startNumber

   (IN) Specifies the custom counter number to start with.

buffer

   (IN/OUT) Points to a buffer which receives information about LAN custom counters.

bufferLen

   (IN) Specifies the size of `buffer`. This should be SS_DEFAULT_BUFFER_SIZE.

Return Values

ESUCCESS or NetWare errors.

Remarks

LAN custom counters can keep track of such things as the number of raw sends and fatal retransmissions. Each counter has a string describing the counter and a value associated with the counter.

The `startNumber` parameter is the starting counter number that is returned on this call to SSGetLANCustomCounters. On the first call to this function, `startNumber` should be 0. For subsequent calls, it should be the number of the next counter that has not been retrieved (therefore,

you must keep track of how many counters have been returned). When FALSE is returned in the `moreflag` field of the GetCustomCountersInfoStructure, all custom counters have been retrieved.

This function returns a GetLANConfigInfoStructure in `buffer`. This structure is defined in NWSERVST.H as follows:

```
typedef struct GetCustomCountersInfoStructure
{
   LONG   currentServerTime;
   BYTE   vConsoleVersion;
   BYTE   vConsoleRevision;
   WORD   moreflag;
   LONG   numberOfCustomCounters;
   BYTE   startOfCustomCounters;
}GetCustomCountersInfoStructure;
```

The `currentServerTime` field contains the time elapsed since the server was brought up. This time is returned in ticks (approximately 1/18 of a second). When this field reaches 0xFFFFFFFF, it wraps to zero.

The `vConsoleVersion` field contains the console version number. `vConsoleVersion` and `vConsoleRevision` track packet format.

The `vConsoleRevision` field contains the console version revision number.

The `moreflag` field indicates whether there are more custom counters that can be retrieved by further calls to this function. If TRUE is returned, there are more counters; if FALSE is returned, there are no more counters.

The `numberOfCustomCounters` field contains the number of custom counters used by the LAN driver.

The `startOfCustomCounters` field contains the first byte of a number of CustomCountersInfo structures in the buffer.

The CustomCountersInfo structure is defined in NWSERVST.H as follows:

```
typedef struct CustomCountersInfo
{
   LONG   value;
   BYTE   stringLength;
   BYTE   stringStart;
}CustomCountersInfo;
```

The `value` field contains the value of the custom counter.

The `stringLength` field contains the length of the string that starts with `stringStart`. If the `stringLength` is zero, there is no string following.

The `stringStart` field contains the first byte of a string that describes the custom counter.

SSGetLoadedMediaNumberList

Returns a list of loaded media numbers. (For cross-platform functionality, see Developing NLMs with Cross-Platform Functions (*NDK: NLM Development Concepts, Tools, and Functions*) and call NWGetLoadedMediaNumList (page 95).)

Local Servers: blocking

Remote Servers: blocking

NetWare Server: 4.x, 5.x, 6.x

Platform: NLM

Service: Server-Based Server Environment

Syntax

```
#include <nit\nwservst.h>
#include <nwmediam.h>

LONG  SSGetLoadedMediaNumberList (
   BYTE   *buffer,
   LONG    bufferLen);
```

Parameters

buffer

   (IN/OUT) Points to a buffer which receives a list of LAN boards.

bufferLen

   (IN) Specifies the size of buffer. This should be SS_DEFAULT_BUFFER_SIZE.

Return Values

ESUCCESS or NetWare errors.

Remarks

This function returns a GetMediaNumberListStructure in buffer. This structure is defined in NWSERVST.H as follows:

```
typedef struct GetMediaNumberListStructure
{
   LONG   currentServerTime;
   BYTE   vConsoleVersion;
   BYTE   vConsoleRevision;
   WORD   reserved;
   LONG   maxNumberOfMedia;
   LONG   mediaListCount;
   LONG   mediaList;
}GetMediaNumberListStructure;
```

The `currentServerTime` field contains the time elapsed since the server was brought up. This time is returned in ticks (approximately 1/18 of a second). When this field reaches 0xFFFFFFFF, it wraps to zero.

The `vConsoleVersion` field contains the console version number. `vConsoleVersion` and `vConsoleRevision` track packet format.

The `vConsoleRevision` field contains the console version revision number.

The `maxNumberOfMedia` field contains the maximum number of media allowed.

The `mediaListCount` field contains the number of media in `mediaList`.

The `mediaList` field contains the first media item in the list. More media follow.

SSGetLSLInfo

Returns information about the LSL. For cross-platform functionality, use instead.

Local Servers: blocking

Remote Servers: blocking

NetWare Server: 4.x, 5.x, 6.x

Platform: NLM

Service: Server-Based Server Environment

Syntax

```
#include <nit\nwservst.h>

LONG SSGetLSLInfo (
   BYTE    *buffer,
   LONG    bufferLen);
```

Parameters

buffer

   (IN/OUT) Points to a buffer which receives a list of LAN boards.

bufferLen

   (IN) Specifies the size of buffer. This should be the size of GetLSLInfoStructure.

Return Values

ESUCCESS or NetWare errors.

Remarks

This function returns a GetLSLInfoStructure in buffer. This structure is defined in NWSERVST.H as follows:

```
typedef struct GetLSLInfoStructure
{
   LONG            currentServerTime;
   BYTE            vConsoleVersion;
   BYTE            vConsoleRevision;
   WORD            reserved;
   LSLInformation  LSLInfo;
}GetLSLInfoStructure;
```

The currentServerTime field contains the time elapsed since the server was brought up. This time is returned in ticks (approximately 1/18 of a second). When this field reaches 0xFFFFFFFF, it wraps to zero.

The `vConsoleVersion` field contains the console version number. `vConsoleVersion` and `vConsoleRevision` track packet format.

The `vConsoleRevision` field contains the console version revision number.

The `LSLInfo` field contians an LSLInformation structure.

The LSLInformation structure is defined in NWSERVST.H as follows:

```
typedef struct {
    LONG    RxBufs;
    LONG    RxBufs75PerCent;
    LONG    RxBufsCheckedOut;
    LONG    RxBufMaxSize;
    LONG    MaxPhysicalSize;
    LONG    LastTimeRxBufAllocated;
    LONG    MaxNumbersOfProtocols;
    LONG    MaxNumbersOfMediaTypes;
    LONG    TotalTXPackets;
    LONG    GetECBBfrs;
    LONG    GetECBFails;
    LONG    AESEventCounts;
    LONG    PostpondedEvents;
    LONG    ECBCxlFails;
    LONG    ValidBfrsReused;
    LONG    EnqueuedSendCnt;
    LONG    TotalRXPackets;
    LONG    UnclaimedPackets;
    BYTE    StatisticsTableMajorVersion;
    BYTE    StatisticsTableMinorVersion;
} LSLInformation;
```

The `RxBufs` field contains the total number of LSL receive buffers.

The `RxBufs75PerCent` field contains the number of LSL receive buffers that must be in use before a warning message is issued that buffers are getting low.

The `RxBufsCheckedOut` field contains the number of LSL buffers in use.

The `RxBufMaxSize` field contains the size of the data portion of the ECBs in bytes.

The `MaxPhysicalSize` field contains the total size of the ECB in bytes.

The `LastTimeRxBufAllocated` field contains the last time (in ticks since the server was brought up) a buffer was checked out.

The `MaxNumbersOfProtocols` field contains the number of protocol stacks supported by the OS.

The `MaxNumbersOfMediaTypes` field contains the number of frame types supported by the OS.

The `TotalTXPackets` field contains the number of packet transmit requests.

The `GetECBBfrs` field contains the number of ECBs that were requested.

The `GetECBFails` field contains the number of times an ECB request failed.

The `AESEventCounts` field contains the total number of AES events that have been processed.

The `PostpondedEvents` field contains the total number of AES events postponed because of critical sections.

The `ECBCxlFails` field contains the number of AES cancel requests that failed because the event was not found on the AES list.

The `ValidBfrsReused` field contains the number of ECBs in the hold queue that were reused before they were removed from the hold queue.

The `EnqueuedSendCnt` field contains the number of send events in the queue that have occurred.

The `TotalRXPackets` field contains the total number of received incoming packets.

The `UnclaimedPackets` field contains the total number of unclaimed incoming packets.

The `StatisticsTableMajorVersion` field contains the major version of the LSL statistics table.

The `StatisticsTableMinorVersion` field contains the minor version of the LSL statistics table.

SSGetLSLLogicalBoardStats

Returns information about LSL logical boards. For cross-platform functionality, use NWGetLSLLogicalBoardStats (page 99) instead.

Local Servers: blocking

Remote Servers: blocking

NetWare Server: 4.x, 5.x, 6.x

Platform: NLM

Service: Server-Based Server Environment

Syntax

```
#include <nit\nwservst.h>

LONG SSGetLSLLogicalBoardStats (
   LONG    boardNumber,
   BYTE   *buffer,
   LONG    bufferLen);
```

Parameters

boardNumber

   (IN) Specifies the board number to return information for.

buffer

   (IN/OUT) Points to a buffer which receives a LSL board information.

bufferLen

   (IN) Specifies the size of `buffer`. This should be the size of GetLSLBoardStatsStructure.

Return Values

ESUCCESS or NetWare errors.

Remarks

This function returns a GetLSLInfoStructure in `buffer`. This structure is defined in NWSERVST.H as follows:

```
typedef struct GetLSLBoardStatsStructure
{
   LONG           currentServerTime;
   BYTE           vConsoleVersion;
   BYTE           vConsoleRevision;
   WORD           reserved;
   LogicalBoard   boardStats;
}GetLSLBoardStatsStructure;
```

The `currentServerTime` field contains the time elapsed since the server was brought up. This time is returned in ticks (approximately 1/18 of a second). When this field reaches 0xFFFFFFFF, it wraps to zero.

The `vConsoleVersion` field contains the console version number. `vConsoleVersion` and `vConsoleRevision` track packet format.

The `vConsoleRevision` field contains the console version revision number.

The `boardStats` field contains an LogicalBoard structure.

The LogicalBoard structure is defined in NWSERVST.H as follows:

```
typedef struct {
   LONG   LogTtlTxPackets;
   LONG   LogTtlRxPackets;
   LONG   LogUnclaimedPackets;
   LONG   reserved;
} LogicalBoard;
```

The `LogTtlTxPackets` field contains the total number of packets transmitted.

The `LogTtlRxPackets` field contains the total number of packets received.

The `LogUnclaimedPackets` field contains the total number of unclaimed packets.

SSGetMediaManagerObjChildList

Returns a list of children belonging to a given media manager parent object. For cross-platform functionality, use NWGetMediaMgrObjChildrenList (page 101) instead.

Local Servers: blocking

Remote Servers: blocking

NetWare Server: 4.x, 5.x, 6.x

Platform: NLM

Service: Server-Based Server Environment

Syntax

```
#include <nit\nwservst.h>

LONG SSGetMediaManagerObjChildList (
   LONG    startNumber,
   LONG    objType,
   LONG    parentObjNumber,
   BYTE    *buffer,
   LONG    bufferLen);
```

Parameters

startNumber

(IN) Specifies the number to start with. This parameter should be 0 on the first call to this function. On subsequent calls, startNumber should be the value returned in the nextStartNumber field of the GetMMChildListStructure.

objType

(IN) Specifies the type of object to return information for.

parentObjectNumber

(IN) Specifies the object number of the media manager object for which you want a list of children.

buffer

(IN/OUT) Points to a buffer which retruns a GetMMObjectChildListStructure.

bufferLen

(IN) Specifies the size of buffer. This should be SS_DEFAULT_BUFFER_SIZE.

Return Values

ESUCCESS or NetWare errors.

Remarks

The `objType` parameter specifies the media manager database type:

0	ADAPTER_OBJECT
1	CHANGER_OBJECT
2	RDEVICE_OBJECT
2	DEVICE_OBJECT
3	MDEVICE_OBJECT
4	RMECIA_OBJECT
4	MEDIA_OBJECT
5	PARTITION_OBJECT
6	SLOT_OBJECT
7	HOTFIX_OBJECT
8	MIRROR_OBJECT
9	PARITY_OBJECT
10	VOLUME_SEG_OBJECT
11	VOLUME_OBJECT
12	CLONE_OBJECT
13	FMEDIA_OBJECT
14	UNKNOWN_OBJECT

SSGetMediaManagerObjChildList returns a GetMMObjectChildListStructure in `buffer`. This structure is defined in NWSERVST.H as follows:

```
typedef struct GetMMObjectChildListStructure
{
   LONG   currentServerTime;
   BYTE   vConsoleVersion;
   BYTE   vConsoleRevision;
   WORD   reserved;
   LONG   nextStartNum;
   LONG   objectCount;
   LONG   objects;
}GetMMObjectChildListStructure;
```

The `currentServerTime` field contains the time elapsed since the server was brought up. This time is returned in ticks (approximately 1/18 of a second). When this field reaches 0xFFFFFFFF, it wraps to zero.

The `vConsoleVersion` field contains the console version number. `vConsoleVersion` and `vConsoleRevision` track packet format.

The `vConsoleRevision` field contains the console version revision number.

The `nextStartNum` field contains the number to pass as the `startNumber` parameter on the next call to this function. When this field is 0, all information has been processed by this function.

The `objectCount` field contains the number of child objects that are in the buffer.

The `objects` field contains the ID number of the first media manager child object. More ID numbers follow.

SSGetMediaManagerObjInfo

Returns information about media manager objects. For cross-platform functionality, use NWGetMediaMgrObjInfo (page 103) instead.

Local Servers: blocking

Remote Servers: blocking

NetWare Server: 4.x, 5.x, 6.x

Platform: NLM

Service: Server-Based Server Environment

Syntax

```
#include <nit\nwservst.h>

LONG SSGetMediaManagerObjInfo (
   LONG    objNumber,
   BYTE   *buffer,
   LONG    bufferLen);
```

Parameters

objNumber

   (IN) Specifies the object number of the media manager object that you want information for.

buffer

   (IN/OUT) Points to a buffer which receives information about the media manager object identified by `objNumber`.

bufferLen

   (IN) Specifies the size of `buffer`. This should be the size of GetMManagerObjInfoStructure.

Return Values

ESUCCESS or NetWare errors.

Remarks

This function returns a GetMManagerObjInfoStructure in `buffer`. This structure is defined in NWSERVST.H as follows:

```
typedef struct GetMManagerObjInfoStructure
{
   LONG     currentServerTime;
   BYTE     vConsoleVersion;
   BYTE     vConsoleRevision;
   WORD     reserved;
```

```
   struct   CopyOfGenericInfoDef info;
}GetMManagerObjInfoStructure;
```

The `currentServerTime` field contains the time elapsed since the server was brought up. This time is returned in ticks (approximately 1/18 of a second). When this field reaches 0xFFFFFFFF, it wraps to zero.

The `vConsoleVersion` field contains the console version number. `vConsoleVersion` and `vConsoleRevision` track packet format.

The `vConsoleRevision` field contains the console version revision number.

The `info` field contains a CopyOfGenericInfoDef structure.

The CopyOfGenericInfoDef structure is defined in NWSERVST.H as follows:

```
struct CopyOfGenericInfoDef
{
   struct CopyOfPMStructure   mediaInfo;
   LONG   mediatype;
   LONG   cartridgetype;
   LONG   unitsize;
   LONG   blocksize;
   LONG   capacity;
   LONG   preferredunitsize;
   BYTE   name[64];
   LONG   type;
   LONG   status;
   LONG   functionmask;
   LONG   controlmask;
   LONG   parentcount;
   LONG   siblingcount;
   LONG   childcount;
   LONG   specificinfosize;
   LONG   objectuniqueid;
   LONG   mediaslot;
};
```

The `mediaInfo` field contains a CopyOfPMStructure.

The `mediatype` field contains the device type of the object:

0	Hard disk
1	CD-ROM
2	WORM device
3	Tape device
4	Magneto-Optical (MO) device

The `cartridgetype` field indicates the type of cartridge or magazine that the device can use. The defined types follow:

0x00000000	fixed media

0x00000001	5.25 floppy
0x00000002	3.5 floppy
0x00000003	5.25 optical
0x00000004	3.5 optical
0x00000005	0.5 tape
0x00000006	0.25 tape
0x00000007	8 mm tape
0x00000008	4 mm tape
0x00000009	Bernoulli disk

The `unitsize` field contains the current transfer unit size (in bytes) for the device.

The `blocksize` field contains the size of a block for the device (in bytes).

The `capacity` field contains the capacity of the device (in blocks).

The `preferredunitsize` field contains the preferred transfer unit size (512 bytes to 1K) for the device.

The `name` field contains a length-preceeded string representing the name of the object.

The `type` field contains the media manager database type:

0	ADAPTER_OBJECT
1	CHANGER_OBJECT
2	RDEVICE_OBJECT
2	DEVICE_OBJECT
3	MDEVICE_OBJECT
4	RMECIA_OBJECT
4	MEDIA_OBJECT
5	PARTITION_OBJECT
6	SLOT_OBJECT
7	HOTFIX_OBJECT
8	MIRROR_OBJECT
9	PARITY_OBJECT
10	VOLUME_SEG_OBJECT
11	VOLUME_OBJECT
12	CLONE_OBJECT
13	FMEDIA_OBJECT
14	UNKNOWN_OBJECT

The `status` field contains the status mask for the object:

0x00000001	OBJECT_ACTIVATED
0x00000002	OBJECT_PHANTOM
0x00000004	OBJECT_ASSIGNABLE
0x00000008	OBJECT_ASSIGNED
0x00000010	OBJECT_RESERVED
0x00000020	OBJECT_BEING_IDENTIFIED
0x00010000	OBJECT_IN_DEVICE
0x00020000	OBJECT_IN_MAGAZINE
0x00040000	OBJECT_IN_CHANGER
0x00080000	OBJECT_LOADABLE
0x00080000	OBJECT_BEING_LOADED
0x01000000	OBJECT_DEVICE_LOCK
0x02000000	OBJECT_CHANGER_LOCK
0x04000000	OBJECT_REMIRRORING
0x08000000	OBJECT_SELECTED

The `functionmask` field indicates the access functions supported on the device:

0 Random read
1 Random write
2 Random write once
3 Sequential read
4 Sequential write
5 Reset end of media
6 Single file marks
7 Multi-file marks
8 Single set marks
9 Multi-set marks
10 Relative data blocks
11 Direct data blocks
12 Position partition
13 Position media

The `controlmask` field indicates the type of control functions that can be issued to the device:

0 Activate/deactivate
1 Mount/dismount
2 Select/unselect
3 Lock/unlock
4 Eject

5 Move media

The `parentcount` field contains the number of parent objects for the device (usually 1).

The `siblingcount` field contains the number of sibling objects for the device (objects with common dependencies).

The `childcount` field contains the number of child objects for the device (objects that depend on the device).

The `specificinfosize` field contains the size of the data structures that are returned.

The `objectuniqueid` field contains the number which identifies the device in the media manager database.

The `mediaslot` field contains the number of the slot that the device occupies.

CopyOfPMStructure is defined in NWSERVST.H as follows:

```
struct CopyOfPMStructure
{
   BYTE    f1[64];
   LONG    f2;
   LONG    f3;
};
```

The `f1` field contains the label of the object.

The `f2` field contains the Novell assigned number for the object.

The `f3` field contains the DOS timestamp of the object.

SSGetMediaManagerObjList

Returns a list of media manager objects. For cross-platform functionality, use instead.

Local Servers: blocking

Remote Servers: blocking

NetWare Server: 4.x, 5.x, 6.x

Platform: NLM

Service: Server-Based Server Environment

Syntax

```
#include <nit\nwservst.h>

LONG SSGetMediaManagerObjList (
   LONG    startNumber,
   LONG    objType,
   BYTE    *buffer,
   LONG    bufferLen);
```

Parameters

startNumber

> (IN) Specifies the number to start with. This parameter should be -1 for the first call to this function. On subsequent calls, `startNumber` should be the value returned in the `nextStartNum` field of the GetMMObjectListsStructure.

objType

> (IN) Specifies the type of object to return information for.

buffer

> (IN/OUT) Points to a buffer which receives a list of media manager objects.

bufferLen

> (IN) Specifies the size of `buffer`. This should be SS_DEFAULT_BUFFER_SIZE.

Return Values

ESUCCESS or NetWare errors.

Remarks

The `objType` parameter specifies the media manager database type:

0	ADAPTER_OBJECT

1	CHANGER_OBJECT
2	RDEVICE_OBJECT
2	DEVICE_OBJECT
3	MDEVICE_OBJECT
4	RMECIA_OBJECT
4	MEDIA_OBJECT
5	PARTITION_OBJECT
6	SLOT_OBJECT
7	HOTFIX_OBJECT
8	MIRROR_OBJECT
9	PARITY_OBJECT
10	VOLUME_SEG_OBJECT
11	VOLUME_OBJECT
12	CLONE_OBJECT
13	FMEDIA_OBJECT
14	UNKNOWN_OBJECT

This function returns a GetMMObjectListsStructure in `buffer`. This structure is defined in NWSERVST.H as follows:

```
typedef struct GetMMObjectListsStructure
{
   LONG    currentServerTime;
   BYTE    vConsoleVersion;
   BYTE    vConsoleRevision;
   WORD    reserved;
   LONG    nextStartNum;
   LONG    objectCount;
   LONG    objects;
}GetMMObjectListsStructure;
```

The `currentServerTime` field contains the time elapsed since the server was brought up. This time is returned in ticks (approximately 1/18 of a second). When this field reaches 0xFFFFFFFF, it wraps to zero.

The `vConsoleVersion` field contains the console version number. `vConsoleVersion` and `vConsoleRevision` track packet format.

The `vConsoleRevision` field contains the console version revision number.

The `nextStartNum` field contains the number to be passed as the `startNumber` parameter on the next call to this function. When this field is -1, all information has been processed.

The `objectCount` field contains the number of media manager objects in the buffer.

The `objects` field contains the ID number of the first media manager object. More ID numbers follow.

SSGetMediaNameByNumber

Returns a media name for a given media number. For cross-platform functionality, use NWGetMediaNameByMediaNum (page 108) instead.

Local Servers: blocking

Remote Servers: blocking

NetWare Server: 4.x, 5.x, 6.x

Platform: NLM

Service: Server-Based Server Environment

Syntax

```
#include <nit\nwservst.h>

LONG SSGetMediaNameByNumber (
   LONG    mediaNumber,
   BYTE   *buffer,
   LONG    bufferLen);
```

Parameters

mediaNumber

   (IN) Specifies the ID number of the media for which you want a name.

buffer

   (IN/OUT) Points to a buffer which receives the media name.

bufferLen

   (IN) Specifies the size of `buffer`. This should be SS_DEFAULT_BUFFER_SIZE.

Return Values

ESUCCESS or NetWare errors.

Remarks

This function returns a GetMediaNameByNumberStructure in `buffer`. This structure is defined in NWSERVST.H as follows:

```
typedef struct GetMediaNameByNumberStructure
{
   LONG   currentServerTime;
   BYTE   vConsoleVersion;
   BYTE   vConsoleRevision;
   WORD   reserved;
   BYTE   mediaNameLength;
```

```
    BYTE    mediaName;
}GetMediaNameByNumberStructure;
```

The `currentServerTime` field contains the time elapsed since the server was brought up. This time is returned in ticks (approximately 1/18 of a second). When this field reaches 0xFFFFFFFF, it wraps to zero.

The `vConsoleVersion` field contains the console version number. `vConsoleVersion` and `vConsoleRevision` track packet format.

The `vConsoleRevision` field contains the console version revision number.

The `mediaNameLength` field contains the length of the media name.

The `mediaName` structure contains the first byte of the media name.

SSGetNetRouterInfo

Returns information about network routing on a server. For cross-platform functionality, use
NWGetNetworkRouterInfo (page 116) instead.

Local Servers: blocking

Remote Servers: blocking

NetWare Server: 4.x, 5.x, 6.x

Platform: NLM

Service: Server-Based Server Environment

Syntax

```
#include <nit\nwservst.h>

LONG SSGetNetRouterInfo (
   LONG    networkNumber,
   BYTE   *buffer,
   LONG    bufferLen);
```

Parameters

networkNumber

   (IN) Specifies the network to return information for.

buffer

   (IN/OUT) Points to a buffer which receives routing information for the server.

bufferLen

   (IN) Specifies the size of buffer. This should be the size of GetNetRouterInfoStructure.

Return Values

ESUCCESS or NetWare errors.

Remarks

This function returns a GetNetRouterInfoStructure in buffer. This structure is defined in
NWSERVST.H as follows:

```
typedef struct GetNetRouterInfoStructure
{
   LONG   currentServerTime;
   BYTE   vConsoleVersion;
   BYTE   vConsoleRevision;
   WORD   reserved;
   LONG   netIDNumber;
   WORD   hopsToNet;
```

```
  WORD    netStatus;
  WORD    timeToNet;
}GetNetRouterInfoStructure;
```

The `currentServerTime` field contains the time elapsed since the server was brought up. This time is returned in ticks (approximately 1/18 of a second). When this field reaches 0xFFFFFFFF, it wraps to zero.

The `vConsoleVersion` field contains the console version number. `vConsoleVersion` and `vConsoleRevision` track packet format.

The `vConsoleRevision` field contains the console version revision number.

The `netIDNumber` field contains the network ID number.

The `hopsToNet` field contains the number of hops to the network.

The `netStatus` field indicates the status of the network.

The `timeToNet` field contains the number of ticks to the network (round-trip).

SSGetNetworkRoutersInfo

Returns information about the routers on a network. For cross-platform functionality, use instead.

Local Servers: blocking

Remote Servers: blocking

NetWare Server: 4.x, 5.x, 6.x

Platform: NLM

Service: Server-Based Server Environment

Syntax

```
#include <nit\nwservst.h>

LONG SSGetNetworkRoutersInfo (
   LONG    networkNumber,
   LONG    startNumber,
   BYTE   *buffer,
   LONG    bufferLen);
```

Parameters

networkNumber

   (IN) Specifies the network number to return router information for.

startNumber

   (IN) Specifies the number to start with.

buffer

   (IN/OUT) Points to a buffer which receives a information about routers on a network.

bufferLen

   (IN) Specifies the size of `buffer`. This should be SS_DEFAULT_BUFFER_SIZE.

Return Values

ESUCCESS or NetWare errors.

Remarks

This function returns a GetNetworkRoutersInfoStructure in `buffer`. This structure is defined in NWSERVST.H as follows:

```
typedef struct GetNetworkRoutersInfoStructure
{
   LONG                  currentServerTime;
   BYTE                  vConsoleVersion;
```

```
   BYTE                    vConsoleRevision;
   WORD                    reserved;
   LONG                    numberOfEntries;
   RoutersInfoStructure    info;
}GetNetworkRoutersInfoStructure;
```

The `currentServerTime` field contains the time elapsed since the server was brought up. This time is returned in ticks (approximately 1/18 of a second). When this field reaches 0xFFFFFFFF, it wraps to zero.

The `vConsoleVersion` field contains the console version number. `vConsoleVersion` and `vConsoleRevision` track packet format.

The `vConsoleRevision` field contains the console version revision number.

The `numberOfEntries` field contains the number of RoutersInfoStructure structures in the buffer.

The `info` field contains the first RoutersInfoStructure. More follow.

The RoutersInfoStructure is defined in NWSERVST.H as follows:

```
typedef struct RoutersInfoStructure
{
   BYTE   node[6];
   LONG   connectedLAN;
   WORD   hopsToNetCount;
   WORD   timeToNet;
}RoutersInfoStructure;
```

The `node` field contains the 6-byte network address of the router.

The `connectedLAN` field contains the LAN board number of the router.

The `hopsToNetCount` field contains the number of hops to the network specified by `networkNumber`.

The `timeToNet` field contains the time (in ticks) to the network specified by `networkNumber`.

SSGetNLMInfo

Returns information about an NLM running on a server. For cross-platform functionality, use
NWGetNLMInfo (page 122) instead.

Local Servers: blocking

Remote Servers: blocking

NetWare Server: 4.x, 5.x, 6.x

Platform: NLM

Service: Server-Based Server Environment

Syntax

```
#include <nit\nwservst.h>

LONG SSGetNLMInfo (
   LONG    NLMNumber,
   BYTE   *buffer,
   LONG    bufferLen);
```

Parameters

`NLMNumber`

   (IN) Specifies the number assigned to the NLM by the OS when the NLM was loaded.

`buffer`

   (IN/OUT) Points to a buffer which receives NLM information.

`bufferLen`

   (IN) Specifies the size of `buffer`. This should be SS_DEFAULT_BUFFER_SIZE.

Return Values

ESUCCESS or NetWare errors.

Remarks

This function returns information for the current connection. The `NLMNumber` parameter is the
number assigned to that NLM by the OS when it is loaded. This number can be obtained by calling
SSGetNLMLoadedList.

This function returns a GetNLMInfoStructure in `buffer`. This structure is defined in
NWSERVST.H as follows:

```
typedef struct GetNLMInfoStructure
{
   LONG   currentServerTime;
   BYTE   vConsoleVersion;
```

```
   BYTE    vConsoleRevision;
   WORD    reserved;
   NLMInformation   NLMInfo;
   BYTE    startOfLStrings;
}GetNLMInfoStructure;
```

The `currentServerTime` field contains the time elapsed since the server was brought up. This time is returned in ticks (approximately 1/18 of a second). When this field reaches 0xFFFFFFFF, it wraps to zero.

The `vConsoleVersion` field contains the console version number. `vConsoleVersion` and `vConsoleRevision` track packet format.

The `vConsoleRevision` field contains the console version revision number.

The `NLMInfo` field contains an NLMInformation structure.

The `startOfLStrings` field contains the first byte of three length-preceded strings (the strings can be 0 bytes long). The strings represent the filename, name, and copyright of the NLM.

The NLMInformation structure is defined in NWSERVST.H as follows:

```
typedef struct {
   LONG    nlmIdentificationNumber;
   LONG    nlmFlags;
   LONG    nlmType;
   LONG    nlmParentID;
   LONG    nlmMajorVersion;
   LONG    nlmMinorVersion;
   LONG    nlmRevision;
   LONG    nlmYear;
   LONG    nlmMonth;
   LONG    nlmDay;
   LONG    nlmAllocAvailBytes;
   LONG    nlmAllocFreeCount;
   LONG    nlmLastGarbCollect;
   LONG    nlmMessageLanguage;
   LONG    nlmNumberOfReferencedPublics;
} NLMInformation;
```

The `nlmIdentificationNumber` field contains the number assigned to the NLM when it was loaded.

The `nlmFlags` field contains a bit mask with a combination of the following:

0x0001	REENTRANT: The module is reentrant. That is, if the NLM is loaded twice, the actual code in the server's memory is reused.
0x0002	MULTIPLE: The module can be loaded more than once by a LOAD console command.
0x0004	SYNCHRONIZE: This NLM option causes the load process to go to sleep until the NLM calls SynchronizeStart.This prevents any other console commands from being processed (particularly LOAD commands) while the NLM is being loaded.
0x0008	PSEUDOPREEMPTION: This option requests that the OS force the NLM to relinquish control if the NLM does not do so on its own often enough.

The `nlmType` field contains a number indicating the NLM type:

Number	Extension	Description
0	.NLM	Generic NLM (default value)
1	.LAN	LAN driver
2	.DSK	Disk driver
3	.NAM	Name space support module
4	.NLM	Utility or support program
5	.MSL	Mirrored Server Link™ (MSL™)
6	.NLM	OS NLM
7	.NLM	Paged high OS NLM
8	.HAM	Host Adapter Module (works with Custom Device Module)
9	.CDM	Custom Device Module (works with Host Adapter Module)
10	.NLM	OS Reserved
11	.NLM	OS Reserved
12	.NLM	OS Reserved
13		SMP normal
14		NIOS
15	.CAD	CIOS CAD
16	.CLS	CIOS CLS
20 through 32		Reserved for NICI (Novell International Cryptographic Infrastructure)

The `nlmParentID` field contains the number assigned to the NLM that caused this NLM to be loaded.

The `nlmMajorVersion` field contains the major version number of the NLM.

The `nlmMinorVersion` field contains the minor version number of the NLM.

The `nlmRevision` field contains the revision letter of the NLM.

The `nlmYear`, `nlmMonth`, and `nlmDay` fields contain the year, month, and day that the NLM was created on.

The `nlmAllocAvailBytes`, `nlmAllocFreeCount`, and `nlmLastGarbCollect` field contain garbage collection information. The `nlmAllocAvailBytes` contains the bytes available for allocation by the NLM. The `nlmAllocFreeCount` contain the number of bytes freed that can be reclaimed. The `nlmLastGarbCollect` field contains the last time garbage collection was done for the NLM (expressed in ticks since the server was brought up).

The `nlmMessageLanguage` field contains the number representing the language that the NLM uses.

The `nlmNumberOfReferencedPublics` field contains the number of external symbols referenced by the NLM.

SSGetNLMLoadedList

Returns a list of NLM applications running on a server. For cross-platform functionality, use NWGetNLMLoadedList (page 124) instead.

Local Servers: blocking

Remote Servers: blocking

NetWare Server: 4.x, 5.x, 6.x

Platform: NLM

Service: Server-Based Server Environment

Syntax

```
#include <nit\nwservst.h>

LONG SSGetNLMLoadedList (
   LONG    startNumber,
   BYTE   *buffer,
   LONG    bufferLen);
```

Parameters

startNumber

   (IN) Specifies the NLM number to start with.

buffer

   (IN/OUT) Points to a buffer which receives NLM information.

bufferLen

   (IN) Specifies the size of buffer. This should be SS_DEFAULT_BUFFER_SIZE.

Return Values

ESUCCESS or NetWare errors.

Remarks

This function returns a list of NLM applications for the current connection. The list is returned in a GetNLMLoadedListStructure in buffer. This structure is defined in NWSERVST.H as follows:

```
typedef struct GetNLMLoadedListStructure
{
   LONG    currentServerTime;
   BYTE    vConsoleVersion;
   BYTE    vConsoleRevision;
   WORD    reserved;
   LONG    NLMLoadedCount;
   LONG    NLMCount;
```

```
    LONG   NLMNumbers;
}GetNLMLoadedListStructure;
```

The `currentServerTime` field contains the time elapsed since the server was brought up. This time is returned in ticks (approximately 1/18 of a second). When this field reaches 0xFFFFFFFF, it wraps to zero.

The `vConsoleVersion` field contains the console version number. `vConsoleVersion` and `vConsoleRevision` track packet format.

The `vConsoleRevision` field contains the console version revision number.

The `NLMLoadedCount` field contains the number of NLM applications loaded on the server. This number might indicate NLM applications that you cannot get information for, such as the loader. Therefore, the total number of NLM applications you receive information about after iterative calls to this function might be less than the `NLMLoadedCount`.

The `NLMCount` field contains the number of NLM applications listed in the buffer.

The `NLMNumbers` field contains the numbers assigned to NLM applications loaded on the server.

SSGetNLMResourceTagList

Returns information about resources used by NLM applications on a server. For cross-platform functionality, use NWGetNLMsResourceTagList (page 126) instead.

Local Servers: blocking

Remote Servers: blocking

NetWare Server: 4.x, 5.x, 6.x

Platform: NLM

Service: Server-Based Server Environment

Syntax

```
#include <nit\nwservst.h>

LONG SSGetNLMResourceTagList (
    LONG    NLMNumber,
    LONG    startNumber,
    BYTE   *buffer,
    LONG    bufferLen);
```

Parameters

NLMNumber

   (IN) Specifies the number assigned to the NLM by the OS when the NLM was loaded

startNumber

   (IN) Specifies the resource tag to start with.

buffer

   (IN/OUT) Points to a buffer which receives a resource tag information.

bufferLen

   (IN) Specifies the size of `buffer`. This should be SS_DEFAULT_BUFFER_SIZE.

Return Values

ESUCCESS or NetWare errors.

Remarks

This function returns a GetNLMResourceTagList in `buffer`. This structure is defined in NWSERVST.H as follows:

```
ttypedef struct GetNLMResourceTagList
{
    LONG            currentServerTime;
    BYTE            vConsoleVersion;
```

```
    BYTE            vConsoleRevision;
    WORD            reserved;
    LONG            totalNumOfRTags;
    LONG            currentNumOfRTags;
    RTagStructure   RTagStart;
}GetNLMResourceTagList;
```

The `currentServerTime` field contains the time elapsed since the server was brought up. This time is returned in ticks (approximately 1/18 of a second). When this field reaches 0xFFFFFFFF, it wraps to zero.

The `vConsoleVersion` field contains the console version number. `vConsoleVersion` and `vConsoleRevision` track packet format.

The `vConsoleRevision` field contains the console version revision number.

The `totalNumOfRTags` field contains the total number of resource tags that the NLM is using.

The `currentNumOfRTags` field contains the number of resource tags that the buffer contains. If additional tags are used by the NLM that did not fit in the buffer, call this function again, using the next number as the `startNumber`.

The `RTagStart` field contains an RTagStructure. This is the first RTagStructure in the buffer. More structures follow, one for each resource tag used on the server.

RTagStructure is defined in NWSERVST.H as follows:

```
typedef struct RTagStructure
{
    LONG    rTagNumber;
    LONG    signature;
    LONG    count;
    BYTE    name;
}RTagStructure;
```

The `rTagNumber` field contains the number assigned to the resource tag when it was allocated.

The `signature` field contains the signature of the resource tag.

The `count` field contains the number of this kind of tag that has been allocated.

The `name` field contains the name of the resource tag. It is null terminated string of unknown size.

11.5 SSGetO*-SSGetV* Functions

Click on any function name in the table of contents to view the purpose, syntax, parameters, and return values for that function.

SSGetOSVersionInfo

Returns information about the NetWare OS version running on the server. For cross-platform functionality, use NWGetOSVersionInfo (page 128) instead.

Local Servers: blocking

Remote Servers: blocking

NetWare Server: 4.x, 5.x, 6.x

Platform: NLM

Service: Server-Based Server Environment

Syntax

```
#include <nit\nwservst.h>

LONG SSGetOSVersionInfo (
   BYTE   *buffer,
   LONG    bufferLen);
```

Parameters

buffer

   (IN/OUT) Points to a buffer which receives OS version information.

bufferLen

   (IN) Specifies the size of `buffer`. This should be the size of GetOSVersionInfoStructure.

Return Values

ESUCCESS or NetWare errors.

Remarks

This function returns a GetOSVersionInfoStructure in `buffer`. This structure is defined in NWSERVST.H as follows:

```
typedef struct GetOSVersionInfoStructure
{
   LONG    currentServerTime;
   BYTE    vConsoleVersion;
   BYTE    vConsoleRevision;
   WORD    reserved;
   BYTE    OSMajorVersion;
   BYTE    OSMinorVersion;
   BYTE    OSRevision;
   BYTE    accountVersion;
   BYTE    VAPVersion;
   BYTE    queueingVersion;
```

```
     BYTE    securityRestLvl;
     BYTE    bridgingSupport;
     LONG    maxNumOfVol;
     LONG    maxNumOfConn;
     LONG    maxNumOfUsers;
     LONG    maxNumOfnameSpaces;
     LONG    maxNumOfLANS;
     LONG    maxNumOfMedias;
     LONG    maxNumOfStacks;
     LONG    maxDirDepth;
     LONG    maxDataStreams;
     LONG    maxNumOfSpoolPr;
     LONG    serverSerialNumber;
     WORD    serverApplicationNumber;
}GetOSVersionInfoStructure;
```

The `currentServerTime` field contains the time elapsed since the server was brought up. This time is returned in ticks (approximately 1/18 of a second). When this field reaches 0xFFFFFFFF, it wraps to zero.

The `vConsoleVersion` field contains the console version number. `vConsoleVersion` and `vConsoleRevision` track packet format.

The `vConsoleRevision` field contains the console version revision number.

The `OSMajorVersion` field contains the major version number of the OS.

The `OSMinorVersion` field contains the minor version number of the OS.

The `OSRevision` field contains the version revision letter of the OS.

The `accountVersion` field contains the version of the accounting subsystem.

The `VAPVersion` field is not used.

The `queueingVersion` field contains the Queuing version number.

The `securityRestLvl` field contains the Security Restriction version number.

The `bridgingSupport` field contains the Internet Bridge support version number.

The `maxNumOfVol` field contains the maximum number of volumes that can be simultaneously mounted on the server. Versions 4.10 and higher return 255 in this field. 0-63 are physical volumes and 64-255 are logical volumes.

The `maxNumOfConn` field contains the maximum number of connections that can be used simultaneously on the server.

The `maxNumOfUsers` field contains the maximum number of simultaneous users allowed on the server.

The `maxNumOfnameSpaces` field contains the maximum number of name spaces that can be simultaneously loaded on a server.

The `maxNumOfLANS` field contains the maximum number of LAN boards that can be used on the server.

The `maxNumOfMedias` field contains the maximum number of different media types allowed on the server.

The `maxNumOfStacks` field contains the maximum number of protocol stacks that can be used in the server.

The `maxDirDepth` field contains the maximum depth of directories that can be used on the server.

The `maxDataStreams` field contains the maximum number of data streams that can be used on the server.

The `maxNumOfSpoolPr` field contains the maximum number of spool printers that can be used on the server.

The `serverSerialNumber` field contains the serial number of the server.

The `serverApplicationNumber` field is included for backward compatibility.

SSGetPacketBurstInfo

Returns Packet Burst™ information. For cross-platform functionality, use NWGetPacketBurstInfo (page 130) instead.

Local Servers: blocking

Remote Servers: blocking

NetWare Server: 4.x, 5.x, 6.x

Platform: NLM

Service: Server-Based Server Environment

Syntax

```
#include <nit\nwservst.h>

LONG SSGetPacketBurstInfo (
   BYTE    *buffer,
   LONG     bufferLen);
```

Parameters

buffer

   (IN/OUT) Points to a buffer which receives Packet Burst information.

bufferLen

   (IN) Specifies the size of buffer. This should be the size of GetPacketBurstInfoStructure.

Return Values

ESUCCESS or NetWare errors.

Remarks

This function returns a GetPacketBurstInfoStructure in buffer. This structure is defined in NWSERVST.H as follows:

```
typedef struct GetPacketBurstInfoStructure
{
   LONG                    currentServerTime;
   BYTE                    vConsoleVersion;
   BYTE                    vConsoleRevision;
   WORD                    reserved;
   PacketBurstInformation  packetBurstInfo;
}GetPacketBurstInfoStructure;
```

The currentServerTime field contains the time elapsed since the server was brought up. This time is returned in ticks (approximately 1/18 of a second). When this field reaches 0xFFFFFFFF, it wraps to zero.

The `vConsoleVersion` field contains the console version number. `vConsoleVersion` and `vConsoleRevision` track packet format.

The `vConsoleRevision` field contains the console version revision number.

The `packetBurstInfo` field contains a PacketBurstInformation structure. This structure is defined in NWSERVST.H as follows:

```
typedef struct {
    LONG    BigInvalidSlotCount;
    LONG    BigForgedPacketCount;
    LONG    BigInvalidPacketCount;
    LONG    BigStillTransmittingCount;
    LONG    StillDoingTheLastRequestCount;
    LONG    InvalidControlRequestCount;
    LONG    ControlInvalidMessageNumberCount;
    LONG    ControlBeingTornDownCount;
    LONG    BigRepeatTheFileReadCount;
    LONG    BigSendExtraCCCount;
    LONG    BigReturnAbortMessageCount;
    LONG    BigReadInvalidMessageNumberCount;
    LONG    BigReadDoItOverCount;
    LONG    BigReadBeingTornDownCount;
    LONG    PreviousControlPacketCount;
    LONG    SendHoldOffMessageCount;
    LONG    BigReadNoDataAvailableCount;
    LONG    BigReadTryingToReadTooMuchCount;
    LONG    ASyncReadErrorCount;
    LONG    BigReadPhysicalReadErrorCount;
    LONG    ControlBadACKFragmentListCount;
    LONG    ControlNoDataReadCount;
    LONG    WriteDuplicateRequestCount;
    LONG    ShouldntBeACKingHereCount;
    LONG    WriteInconsistentPacketLengthsCount;
    LONG    FirstPacketIsntAWriteCount;
    LONG    WriteTrashedDuplicateRequestCount;
    LONG    BigWriteInvalidMessageNumberCount;
    LONG    BigWriteBeingTornDownCount;
    LONG    BigWriteBeingAbortedCount;
    LONG    ZeroACKFragmentCountCount;
    LONG    WriteCurrentlyTransmittingCount;
    LONG    TryingToWriteTooMuchCount;
    LONG    WriteOutOfMemoryForControlNodesCount;
    LONG    WriteDidntNeedThisFragmentCount;
    LONG    WriteTooManyBuffersCheckedOutCount;
    LONG    WriteTimeOutCount;
    LONG    WriteGotAnACKCount;
    LONG    WriteGotAnACKCount1;
    LONG    PollerAbortedTheConnectionCount;
    LONG    MaybeHadOutOfOrderWritesCount;
    LONG    HadAnOutOfOrderWriteCount;
    LONG    MovedTheACKBitDownCount;
    LONG    BumpedOutOfOrderWriteCount;
    LONG    PollerRemovedOldOutOfOrderCount;
```

```
    LONG    WriteDidntNeedButRequestedACKCount;
    LONG    WriteTrashedPacketCount;
    LONG    TooManyACKFragmentsCount;
    LONG    SavedAnOutOfOrderPacketCount;
    LONG    ConnectionBeingAbortedCount;
} PacketBurstInformation;
```

Descriptions of the fields in this structure are not available as of this edition.

SSGetProtocolConfiguration

Returns configuration information about the protocols on a server. For cross-platform functionality, use NWGetProtocolStackConfigInfo (page 133) instead.

Local Servers: blocking

Remote Servers: blocking

NetWare Server: 4.x, 5.x, 6.x

Platform: NLM

Service: Server-Based Server Environment

Syntax

```
#include <nit\nwservst.h>

LONG SSGetProtocolConfiguration (
   LONG    startNumber,
   BYTE   *buffer,
   LONG    bufferLen);
```

Parameters

startNumber

   (IN) Indicates the number to start with.

buffer

   (IN/OUT) Points to a buffer which receives a information about protocol configuration of the server.

bufferLen

   (IN) Specifies the size of buffer. This should be SS_DEFAULT_BUFFER_SIZE.

Return Values

ESUCCESS or NetWare errors.

Remarks

This function returns a GetProtocolConfigStructure in buffer. This structure is defined in NWSERVST.H as follows:

```
typedef struct GetProtocolConfigStructure
{
   LONG   currentServerTime;
   BYTE   vConsoleVersion;
   BYTE   vConsoleRevision;
   WORD   reserved;
   BYTE   configMajorVersion;
```

```
    BYTE    configMinorVerstion;
    BYTE    stackMajorVersion;
    BYTE    stackMinorVersion;
    BYTE    shortName[16];
    BYTE    fullNameLength;
    BYTE    fullName;
}GetProtocolConfigStructure;
```

The `currentServerTime` field contains the time elapsed since the server was brought up. This time is returned in ticks (approximately 1/18 of a second). When this field reaches 0xFFFFFFFF, it wraps to zero.

The `vConsoleVersion` field contains the console version number. `vConsoleVersion` and `vConsoleRevision` track packet format.

The `vConsoleRevision` field contains the console version revision number.

The `configMajorVersion` field contains the major version number of the configuration table.

The `configMinorVerstion` field contains the minor version number of the configuration table.

The `stackMajorVersion` field contains the major version number of the protocol stack.

The `stackMinorVersion` field contains the minor version number of the protocol stack.

The `shortName` field contains the short protocol name (used to register the stack with the LSL):

VIRTUAL_LAN	For use where no Frame ID/MAC envelope is necessary
LOCALTALK	Apple LocalTalk frame
ETHERNET_II	Ethernet using a DEC Ethernet II envelope
ETHERNET_802.2	Ethernet (802.3) using an 802.2 envelope
TOKEN-RING	Token ring (802.5) using an 802.2 envelope
ETHERNET_802.3	IPX 802.3 raw encapsulation
802.4	Token-passing bus envelope
NOVELL_PCN2	Novell's IBM PC Network II envelope
GNET	Gateway's GNET frame envelope
PRONET-10	Proteon's ProNET I/O frame envelope
ETHERNET_SNAP	Ethernet (802.3) using an 802.2 envelope with SNAP
TOKEN-RING_SNAP	Token ring (802.5) using an 802.2 envelope with SNAP
LANPAC_II	Racore's frame envelope
ISDN	Integrated Services Digital Network
NOVELL_RX-NET	Novell's ArcNet 68 envelope
IBM_PCN2_802.2	IBM PCN2 using 802.2 envelope
IBM_PCN2_SNAP	IBM PCN2 using 802.2 with SNAP envelope
OMNINET/4	Corvus's frame envelope

3270_COAXA	Harris Adacom's frame envelope
IP	IP Tunnel frame envelope
FDDI_802.2	FDDI (802.7) using an 802.2 envelope
IVDLAN_802.9	Commtex, Inc.'s frame envelope
DATACO_OSI	Dataco's frame envelope
FDDI_SNAP	FDDI (802.7) using 802.2 with a SNAP envelope
IBM_SDLC	SDLC tunnel envelope
PCO_FDDITP	PC Office frame envelope
WAIDNET	Hypercommunications
SLIP	Novell frame envelope
PPP	Novell frame envelope

The `fullNameLength` field contains the length of the full name.

The `fullName` field contains the first byte of the full name.

SSGetProtocolCustomInfo

Returns custom information about a protocol stack on a server. For cross-platform functionality, use NWGetProtocolStackCustomInfo (page 135) instead.

Local Servers: blocking

Remote Servers: blocking

NetWare Server: 4.x, 5.x, 6.x

Platform: NLM

Service: Server-Based Server Environment

Syntax

```
#include <nit\nwservst.h>

LONG SSGetProtocolCustomInfo (
   LONG    stackNumber,
   LONG    customStartNumber,
   BYTE   *buffer,
   LONG    bufferLen);
```

Parameters

stackNumber

   (IN) Specifies the number of the protocol stack that you want information for.

customStartNumber

   (IN) Specifies the custom information structure to start with. For the first call to this function, customStartNumber should be 0. On subsequent calls, it should be the next custom information structure that has not been retrieved. All information has been retrieved when no more information is returned by this function.

buffer

   (IN/OUT) Points to a buffer which receives custom information about the protocol stack.

bufferLen

   (IN) Specifies the size of buffer. This should be SS_DEFAULT_BUFFER_SIZE.

Return Values

ESUCCESS or NetWare errors.

Remarks

This function returns a GetProtocolCustomInfoStructure in buffer. This structure is defined in NWSERVST.H as follows:

```
typedef struct GetProtocolCustomInfoStructure
{
   LONG                 currentServerTime;
   BYTE                 vConsoleVersion;
   BYTE                 vConsoleRevision;
   WORD                 reserved;
   LONG                 customCount;
   ProtocolCustomInfo   info;
}GetProtocolCustomInfoStructure;
```

The `currentServerTime` field contains the time elapsed since the server was brought up. This time is returned in ticks (approximately 1/18 of a second). When this field reaches 0xFFFFFFFF, it wraps to zero.

The `vConsoleVersion` field contains the console version number. `vConsoleVersion` and `vConsoleRevision` track packet format.

The `vConsoleRevision` field contains the console version revision number.

The `customCount` field contains the number of ProtocolCustomInfo structures in the buffer.

The `info` field contains the first ProtocolCustomInfo structure. More structures follow.

The ProtocolCustomInfo structure is defined in NWSERVST.H as follows:

```
typedef struct ProtocolCustomInfo
{
   LONG   value;
   BYTE   length;
   BYTE   customData;
}ProtocolCustomInfo;
```

The `value` field contains the value of the custom counter.

The `length` field contains the length of `customData`.

The `customData` field contains the first byte of a string describing the custom counter. The length of the string is `length`.

SSGetProtocolNumbersByLANBoard

Returns a list of protocol stack ID numbers for a given LAN board. For cross-platform functionality, use NWGetProtocolStkNumsByLANBrdNum (page 139) instead.

Local Servers: blocking

Remote Servers: blocking

NetWare Server: 4.x, 5.x, 6.x

Platform: NLM

Service: Server-Based Server Environment

Syntax

```
#include <nit\nwservst.h>

LONG SSGetProtocolNumbersByLANBoard (
   LONG    LANBoardNumber,
   BYTE   *buffer,
   LONG    bufferLen);
```

Parameters

LANBoardNumber

   (IN) Specifies the ID number of the LAN board for which you want a list of protocols.

buffer

   (IN/OUT) Points to a buffer which receives a list of protocols.

bufferLen

   (IN) Specifies the size of buffer. This should be SS_DEFAULT_BUFFER_SIZE.

Return Values

ESUCCESS or NetWare errors.

Remarks

This function returns a GetProtocolByBoardStructure in buffer. This structure is defined in NWSERVST.H as follows:

```
typedef struct GetProtocolByBoardStructure
{
   LONG    currentServerTime;
   BYTE    vConsoleVersion;
   BYTE    vConsoleRevision;
   WORD    reserved;
   LONG    stackIDCount;
```

```
   LONG    stackID;
}GetProtocolByBoardStructure;
```

The `currentServerTime` field contains the time elapsed since the server was brought up. This time is returned in ticks (approximately 1/18 of a second). When this field reaches 0xFFFFFFFF, it wraps to zero.

The `vConsoleVersion` field contains the console version number. `vConsoleVersion` and `vConsoleRevision` track packet format.

The `vConsoleRevision` field contains the console version revision number.

The `stackIDCount` field contains the number of protocol stack ID numbers in the buffer.

The `stackID` field contains the first protocol stack ID number in the buffer. More numbers follow.

SSGetProtocolNumbersByMedia

Returns a list of protocol stack ID numbers for a given media. For cross-platform functionality, use NWGetProtocolStkNumsByMediaNum (page 141) instead.

Local Servers: blocking

Remote Servers: blocking

NetWare Server: 4.x, 5.x, 6.x

Platform: NLM

Service: Server-Based Server Environment

Syntax

```
#include <nit\nwservst.h>

LONG SSGetProtocolNumbersByMedia (
   LONG    mediaNumber,
   BYTE   *buffer,
   LONG    bufferLen);
```

Parameters

mediaNumber

   (IN) Specifies the media number (frame number) for which you want protocol stack information.

buffer

   (IN/OUT) Points to a buffer which receives a list of protocols.

bufferLen

   (IN) Specifies the size of buffer. This should be SS_DEFAULT_BUFFER_SIZE.

Return Values

ESUCCESS or NetWare errors.

Remarks

This function returns a list of protocol stack ID numbers for a given media. The mediaNumber is the frame ID number of the media:

0	For use where no Frame ID/MAC envelope is necessary
1	Apple LocalTalk frame
2	Ethernet using a DEC Ethernet II envelope
3	Ethernet (802.3) using an 802.2 envelope

4	Token ring (802.5) using an 802.2 envelope
5	IPX 802.3 raw encapsulation
6	Token-passing bus envelope
7	Novell's IBM PC Network II envelope
8	Gateway's GNET frame envelope
9	Proteon's ProNET I/O frame envelope
10	Ethernet (802.3) using an 802.2 envelope with SNAP
11	Token ring (802.5) using an 802.2 envelope with SNAP
12	Racore's frame envelope
13	Integrated Services Digital Network
14	Novell's ArcNet 68 envelope
15	IBM PCN2 using 802.2 envelope
16	IBM PCN2 using 802.2 with SNAP envelope
17	Corvus's frame envelope
18	Harris Adacom's frame envelope
19	IP Tunnel frame envelope
20	FDDI (802.7) using an 802.2 envelope
21	Commtex, Inc.'s frame envelope
22	Dataco's frame envelope
23	FDDI (802.7) using 802.2 with a SNAP envelope
24	SDLC tunnel envelope
25	PC Office frame envelope
26	Hypercommunications
27	Novell frame envelope

This function returns a GetProtocolByMediaStructure in `buffer`. This structure is defined in NWSERVST.H as follows:

```
typedef struct GetProtocolByMediaStructure
{
   LONG   currentServerTime;
   BYTE   vConsoleVersion;
   BYTE   vConsoleRevision;
   WORD   reserved;
   LONG   stackIDCount;
   LONG   stackID;
}GetProtocolByMediaStructure;
```

The `currentServerTime` field contains the time elapsed since the server was brought up. This time is returned in ticks (approximately 1/18 of a second). When this field reaches 0xFFFFFFFF, it wraps to zero.

The `vConsoleVersion` field contains the console version number. `vConsoleVersion` and `vConsoleRevision` track packet format.

The `vConsoleRevision` field contains the console version revision number.

The `stackIDCount` field contains the number of protocol stack ID numbers in the buffer.

The `stackID` field contains the first protocol stack ID number in the buffer. More numbers follow.

SSGetProtocolStatistics

Returns protocol statistics for a server. For cross-platform functionality, use
NWGetProtocolStackStatsInfo (page 137) instead.

Local Servers: blocking

Remote Servers: blocking

NetWare Server: 4.x, 5.x, 6.x

Platform: NLM

Service: Server-Based Server Environment

Syntax

```
#include <nit\nwservst.h>

LONG SSGetProtocolStatistics (
   LONG     stackNumber,
   BYTE    *buffer,
   LONG     bufferLen);
```

Parameters

stackNumber

   (IN) Specifies the stack number of the protocol stack for which you want information.

buffer

   (IN/OUT) Points to a buffer which receives protocol statistics.

bufferLen

   (IN) Specifies the size of `buffer`. This should be the size of GetProtocolStatsStructure.

Return Values

ESUCCESS or NetWare errors.

Remarks

This function returns a GetProtocolStatsStructure in `buffer`. This structure is defined in
NWSERVST.H as follows:

```
typedef struct GetProtocolStatsStructure
{
   LONG   currentServerTime;
   BYTE   vConsoleVersion;
   BYTE   vConsoleRevision;
   WORD   reserved;
   BYTE   StatMajorVersion;
   BYTE   StatMinorVersion;
```

```
    WORD    GenericCounters;
    LONG    ValidCntsMask;
    LONG    TotalTxPackets;
    LONG    TotalRxPackets;
    LONG    IgnoredRxPackets;
    WORD    NumberOfCustomCounters;
}GetProtocolStatsStructure;
```

The `currentServerTime` field contains the time elapsed since the server was brought up. This time is returned in ticks (approximately 1/18 of a second). When this field reaches 0xFFFFFFFF, it wraps to zero.

The `vConsoleVersion` field contains the console version number. `vConsoleVersion` and `vConsoleRevision` track packet format.

The `vConsoleRevision` field contains the console version revision number.

The `StatMajorVersion` field contains the major version number of the statistics table.

The `StatMinorVersion` field contains the minor version number of the statistics table.

The `GenericCounters` field contains the number of counters in the fixed portion of the table. It is always set to 3.

The `ValidCntsMask` field contains a bit mask indicating which counters are valid (starting with right-most representing the first counter). If the bit is 0, the counter is valid; if it is 1, the counter is not valid.

The `TotalTxPackets` field contains the total number of packets that were requested to be transmitted.

The `TotalRxPackets` field contains the total number of packets that were received.

The `IgnoredRxPackets` field contains the number of incoming packets that were ignored by the stack.

The `NumberOfCustomCounters` field contains the number of custom counters for the protocol stack.

SSGetRouterAndSAPInfo

Returns router and SAP information. For cross-platform functionality, use NWGetGeneralRouterAndSAPInfo (page 81) instead.

Local Servers: blocking

Remote Servers: blocking

NetWare Server: 4.x, 5.x, 6.x

Platform: NLM

Service: Server-Based Server Environment

Syntax

```
#include <nit\nwservst.h>

LONG SSGetRouterAndSAPInfo (
   BYTE    *buffer,
   LONG     bufferLen);
```

Parameters

buffer

   (IN/OUT) Points to a buffer which receives router and SAP information for a server.

bufferLen

   (IN) Specifies the size of `buffer`. This should be the size of GetRouterAndSAPInfoStructure.

Return Values

ESUCCESS or NetWare errors.

Remarks

This function returns a GetRouterAndSAPInfoStructure in `buffer`. This structure is defined in NWSERVST.H as follows:

```
typedef struct GetRouterAndSAPInfoStructure
{
   LONG    currentServerTime;
   BYTE    vConsoleVersion;
   BYTE    vConsoleRevision;
   WORD    reserved;
   LONG    RIPSocketNumber;
   LONG    routerDownFlag;
   LONG    trackOnFlag;
   LONG    extRouterActiveFlag;
   LONG    SAPSocketNumber;
```

```
   LONG    rpyNearestServerFlag;
}GetRouterAndSAPInfoStructure;
```

The `currentServerTime` field contains the time elapsed since the server was brought up. This time is returned in ticks (approximately 1/18 of a second). When this field reaches 0xFFFFFFFF, it wraps to zero.

The `vConsoleVersion` field contains the console version number. `vConsoleVersion` and `vConsoleRevision` track packet format.

The `vConsoleRevision` field contains the console version revision number.

The `RIPSocketNumber` field contains the router socket number.

The `routerDownFlag` field indicates whether the internal router is up or down.

The `trackOnFlag` field indicates whether router tracking is active (the console operator issued the TRACK ON console command).

The `extRouterActiveFlag` field indicates whether an external router is active.

The `SAPSocketNumber` field contains the number of the socket that receives SAP packets.

The `rpyNearestServerFlag` field indicates whether the server responds to GetNearestServer.

SSGetServerInfo

Returns information about a server. For cross-platform functionality, use NWGetServerInfo (page 147) instead.

Local Servers: blocking

Remote Servers: blocking

NetWare Server: 4.x, 5.x, 6.x

Platform: NLM

Service: Server-Based Server Environment

Syntax

```
#include <nit\nwservst.h>

LONG SSGetServerInfo (
   LONG     serverType,
   BYTE     nameLength,
   BYTE   *name,
   BYTE   *buffer,
   LONG    bufferLen);
```

Parameters

serverType

　　(IN) Specifies the server type. This *must* be 0x400.

nameLength

　　(IN) Specifies the length of the server name (name).

name

　　(IN) Points to the name of the server.

buffer

　　(IN/OUT) Points to a buffer which receives a information about the server.

bufferLen

　　(IN) Specifies the size of buffer. This should be the size of GetServerInfoStructure.

Return Values

ESUCCESS or NetWare errors.

Remarks

This function returns a GetServerInfoStructure in buffer. This structure is defined in NWSERVST.H as follows:

```
typedef struct GetServerInfoStructure
{
    LONG    currentServerTime;
    BYTE    vConsoleVersion;
    BYTE    vConsoleRevision;
    WORD    reserved;
    BYTE    serverAddress[12];
    WORD    hopsToServer;
}GetServerInfoStructure;
```

The `currentServerTime` field contains the time elapsed since the server was brought up. This time is returned in ticks (approximately 1/18 of a second). When this field reaches 0xFFFFFFFF, it wraps to zero.

The `vConsoleVersion` field contains the console version number. `vConsoleVersion` and `vConsoleRevision` track packet format.

The `vConsoleRevision` field contains the console version revision number.

The `serverAddress` field contains the node address of the server.

The `hopsToServer` field contains the number of hops to the server.

The value of the `serverType` parameter must be 0x0400.

SSGetServerSourcesInfo

Returns address information about servers known to a server with a given name. For cross-platform functionality, use NWGetServerSourcesInfo (page 153) instead.

Local Servers: blocking

Remote Servers: blocking

NetWare Server: 4.x, 5.x, 6.x

Platform: NLM

Service: Server-Based Server Environment

Syntax

```
#include <nit\nwservst.h>

LONG SSGetServerSourcesInfo (
   LONG     startNumber,
   LONG     serverType,
   BYTE     nameLength,
   BYTE    *name,
   BYTE    *buffer,
   LONG     bufferLen);
```

Parameters

startNumber

   (IN) Indicates the number to start with.

serverType

   (IN) Specifies the type of server to obtain information for.

nameLength

   (IN) Specifies the length of the server name (name).

name

   (IN) Points to the name of the server.

buffer

   (IN/OUT) Points to a buffer which receives a information about protocol configuration of the server.

bufferLen

   (IN) Specifies the size of buffer. This should be SS_DEFAULT_BUFFER_SIZE.

Return Values

ESUCCESS or NetWare errors.

Remarks

This function returns a GetServerSourcesStructure in `buffer`. This structure is defined in NWSERVST.H as follows:

```
typedef struct GetServerSourcesStructure
{
    LONG                        currentServerTime;
    BYTE                        vConsoleVersion;
    BYTE                        vConsoleRevision;
    WORD                        reserved;
    LONG                        numberOfEntries;
    ServerSourceInfoStructure   info;
}GetServerSourcesStructure;
```

The `currentServerTime` field contains the time elapsed since the server was brought up. This time is returned in ticks (approximately 1/18 of a second). When this field reaches 0xFFFFFFFF, it wraps to zero.

The `vConsoleVersion` field contains the console version number. `vConsoleVersion` and `vConsoleRevision` track packet format.

The `vConsoleRevision` field contains the console version revision number.

The `numberOfEntries` field contains the number of structures in the buffer.

The `info` field contains the first ServerSourceInfoStructure. More follow.

```
typedef struct ServerSourceInfoStructure
{
    BYTE    serverNode[6];
    LONG    connectLAN;
    WORD    hopCount;
}ServerSourceInfoStructure;
```

The `serverNode` field contains the node address of a server.

The `connectLAN` field contains the LAN board number of the server.

The `hopCount` field contains the number of hops to the server.

SSGetUserInfo

Returns user information for a given connection. For cross-platform functionality, use NWGetUserInfo (page 155) instead.

Local Servers: blocking

Remote Servers: blocking

NetWare Server: 4.x, 5.x, 6.x

Platform: NLM

Service: Server-Based Server Environment

Syntax

```
#include <nit\nwservst.h>

LONG SSGetUserInfo (
   LONG    connectionNumber,
   BYTE   *buffer,
   LONG    bufferLen);
```

Parameters

connectionNumber

(IN) Specifies the connection number that you want user information for. The user for the connection must be logged in (licensed) for the server to return any information about the user.

buffer

(IN/OUT) Points to a buffer which receives user information.

bufferLen

(IN) Specifies the size of `buffer`. This should be SS_DEFAULT_BUFFER_SIZE.

Return Values

ESUCCESS or NetWare errors.

Remarks

This function returns a GetUserInfoStructure in `buffer`. This structure is defined in NWSERVST.H as follows:

```
typedef struct GetUserInfoStructure
{
   LONG              currentServerTime;
   BYTE              vConsoleVersion;
   BYTE              vConsoleRevision;
```

```
   WORD               reserved;
   UserInformation    userInfo;
   BYTE               userNameLen;
   BYTE               username;
}GetUserInfoStructure;
```

The `currentServerTime` field contains the time elapsed since the server was brought up. This time is returned in ticks (approximately 1/18 of a second). When this field reaches 0xFFFFFFFF, it wraps to zero.

The `vConsoleVersion` field contains the console version number. `vConsoleVersion` and `vConsoleRevision` track packet format.

The `vConsoleRevision` field contains the console version revision number.

The `userInfo` field contains a UserInformation structure for the connection.

The `userNameLen` field contains the length of the `username` field.

The `username` field contains the name of the user.

The UserInformation structure is defined in NWSERVST.H as follows:

```
typedef struct {
   LONG   connectionNumber;
   LONG   useCount;
   BYTE   connectionServiceType;
   BYTE   loginTime[7];
   LONG   status;
   LONG   expirationTime;
   LONG   objectType;
   BYTE   transactionFlag;
   BYTE   logicalLockThreshold;
   BYTE   recordLockThreshold;
   BYTE   fileWriteFlags;
   BYTE   fileWriteState;
   BYTE   filler;
   WORD   fileLockCount;
   WORD   recordLockCount;
   BYTE   totalBytesRead[6];
   BYTE   totalBytesWritten[6];
   LONG   totalRequests;
   LONG   heldRequests;
   BYTE   heldBytesRead[6];
   BYTE   heldBytesWritten[6];
} UserInformation;
```

The `connectionNumber` field contains the connection number of the user.

The `useCount` field contains 1 if the connection is in use, or 0 if the connection is not in use.

The `connectionServiceType` field contains the connection type:

1	(Included for CLIB backwards compatibility)
2	NCP_CONNECTION_TYPE

3	NLM_CONNECTION_TYPE
4	AFP_CONNECTION_TYPE
5	FTAM_CONNECTION_TYPE
6	ANCP_CONNECTION_TYPE

The `loginTime` field contains the time that the user logged in.

The `status` field contains the status of the connection:

0x00000001	LOGGED_IN
0x00000002	BEING_ABORTED
0x00000004	AUDITED
0x00000008	NEEDS_SECURITY_CHANGE
0x00000010	MAC_STATION
0x00000020	AUTHENTICATED_TEMPORARY
0x00000040	AUDIT_CONNECTION_RECORDED
0x00000080	DSAUDIT_CONNECTION_RECORDED

The `expirationTime` field contains the time before the authentication expires (in ticks). If this value is 0, there is no expiration time.

The `objectType` field contains the type of the user.

The `transactionFlag` field contains transaction tracking information

The `logicalLockThreshold` field contains the maximum number of logical locks the user can have.

The `recordLockThreshold` field contains maximum number of record locks the user can have.

The `fileWriteFlags` field contains a flag indicating the writing status as follows:

1	Writing
2	Write aborted

The `fileWriteState` field indicates the writing status:

0	not writing
1	write in progress
2	write being stopped

The `filler` field is unused.

The `fileLockCount` field contains the number of files the user has locked.

The `recordLockCount` field contains the number of records the user has locked.

The `totalBytesRead` field contains the number of bytes the user has read (48-bit value).

The `totalBytesWritten` field contains the number of bytes the user has written (48-bit value).

The `totalRequests` field contains the number of requests the user has sent.

The `heldRequests` field contains the number of requests held for accounting purposes.

The `heldBytesRead` field contains the number of bytes the user has read that have a hold on them for accounting purposes.

The `heldBytesWritten` field contains the number of bytes the user has written that have a hold on them

SSGetVolumeSegmentList

Returns a list of volume segments for a given volume. For cross-platform functionality, use NWGetVolumeSegmentList (page 159) instead.

Local Servers: blocking

Remote Servers: blocking

NetWare Server: 4.x, 5.x, 6.x

Platform: NLM

Service: Server-Based Server Environment

Syntax

```
#include <nit\nwservst.h>

LONG SSGetVolumeSegmentList (
   LONG    volumeNumber,
   BYTE   *buffer,
   LONG    bufferLen);
```

Parameters

volumeNumber

   (IN) Specifies the volume number of the volume that you want information for.

buffer

   (IN/OUT) Points to a buffer which receives a list of volume segments.

bufferLen

   (IN) Specifies the size of `buffer`. This should be SS_DEFAULT_BUFFER_SIZE.

Return Values

ESUCCESS or NetWare errors.

Remarks

This function returns a GetVolumeSegmentListStructure in `buffer`. This structure is defined in NWSERVST.H as follows:

```
typedef struct GetVolumeSegmentListStructure
{
   LONG                    currentServerTime;
   BYTE                    vConsoleVersion;
   BYTE                    vConsoleRevision;
   WORD                    reserved;
   LONG                    numberOfSegments;
```

```
    VolumeSegmentStructure    segment;
}GetVolumeSegmentListStructure;
```

The `currentServerTime` field contains the time elapsed since the server was brought up. This time is returned in ticks (approximately 1/18 of a second). When this field reaches 0xFFFFFFFF, it wraps to zero.

The `vConsoleVersion` field contains the console version number. `vConsoleVersion` and `vConsoleRevision` track packet format.

The `vConsoleRevision` field contains the console version revision number.

The `numberOfSegments` field contains the number of volume segments on the volume.

The `segment` field contains the VolumeSegmentStructure for the first volume segment. More of these structures follow in the buffer, one for each volume segment.

The VolumeSegmentStructure is defined in NWSERVST.H as follows:

```
typedef struct VolumeSegmentStructure
{
   LONG    segmentDevice;
   LONG    segmentOffset;
   LONG    segmentSize;
}VolumeSegmentStructure;
```

The `segmentDevice` field identifies the device that the segment is located on.

The `segmentOffset` field contains the offset of the segment in bytes.

The `segmentSize` field contains the segment size in bytes.

SSGetVolumeSwitchInfo

Returns information about the number of times various code paths have been taken in the NetWare OS. For cross-platform functionality, use instead.

Local Servers: blocking

Remote Servers: blocking

NetWare Server: 4.x, 5.x, 6.x

Platform: NLM

Service: Server-Based Server Environment

Syntax

```
#include <nit\nwservst.h>

LONG SSGetVolumeSwitchInfo (
   LONG    startNumber,
   BYTE   *buffer,
   LONG    bufferLen);
```

Parameters

startNumber

   (IN) Specifies the number of the counter to start with. (This parameter is included for the future, when there might be more counters than can be retrieved by one call to this function.)

buffer

   (IN/OUT) Points to a buffer which receives volume switch information.

bufferLen

   (IN) Specifies the size of `buffer`. This should be SS_DEFAULT_BUFFER_SIZE.

Return Values

ESUCCESS or NetWare errors.

Remarks

This function returns a GetVolumeSwitchInfoStructure in `buffer`. This structure is defined in NWSERVST.H as follows:

```
typedef struct GetVolumeSwitchInfoStructure
{
   LONG   currentServerTime;
   BYTE   vConsoleVersion;
   BYTE   vConsoleRevision;
   WORD   reserved;
   LONG   totalLFSCounters;
```

```
   LONG   currentLFSCounters;
   LONG   counters;
}GetVolumeSwitchInfoStructure;
```

The `currentServerTime` field contains the time elapsed since the server was brought up. This time is returned in ticks (approximately 1/18 of a second). When this field reaches 0xFFFFFFFF, it wraps to zero.

The `vConsoleVersion` field contains the console version number. `vConsoleVersion` and `vConsoleRevision` track packet format.

The `vConsoleRevision` field contains the console version revision number.

The `totalLFSCounters` field contains the total number of LFS counters.

The `currentLFSCounters` field contains the number of LFS counters returned by this call to SSGetVolumeSwitchInfo.

The `counters` field contains the first LFS counter. This counter is followed by others.

You might want to define a structure to retrieve the LFS counters. However, an example structure (LFSCountersStructure) is included in NWSERVST.H so that the fields can be identified. In the future this structure might grow beyond a size that can be retrieved with a single call to a function. The LFSCountersStructure is defined as follows:

```
typedef struct LFSCountersStructure
{
   LONG   ReadFile;
   LONG   WriteFile;
   LONG   DeleteFile;
   LONG   RenMove;
   LONG   OpenFile;
   LONG   CreateFile;
   LONG   CreateAndOpenFile;
   LONG   CloseFile;
   LONG   ScanDeleteFile;
   LONG   SalvageFile;
   LONG   PurgeFile;
   LONG   MigrateFile;
   LONG   DeMigrateFile;
   LONG   CreateDir;
   LONG   DeleteDir;
   LONG   DirectoryScans;
   LONG   MapPathToDirNum;
   LONG   ModifyDirEntry;
   LONG   GetAccessRights;
   LONG   GetAccessRightsFromIDs;
   LONG   MapDirNumToPath;
   LONG   GetEntryFromPathStrBase;
   LONG   GetOtherNSEntry;
   LONG   GetExtDirInfo;
   LONG   GetParentDirNum;
   LONG   AddTrusteeR;
   LONG   ScanTrusteeR;
   LONG   DelTrusteeR;
```

```
LONG    PurgeTrust;
LONG    FindNextTrustRef;
LONG    ScanUserRestNodes;
LONG    AddUserRest;
LONG    DeleteUserRest;
LONG    RtnDirSpaceRest;
LONG    GetActualAvailDskSp;
LONG    CntOwnedFilesAndDirs;
LONG    MigFileInfo;
LONG    VolMigInfo;
LONG    ReadMigFileData;
LONG    GetVolusageStats;
LONG    GetActualVolUsageStats;
LONG    GetDirUsageStats;
LONG    NMFileReadsCount;
LONG    NMFileWritesCount;
LONG    MapPathToDirectoryNumberOrPhantom;
LONG    StationHasAccessRightsGrantedBelow;
LONG    GetDataStreamLengthsFromPathStringBase;
LONG    CheckAndGetDirectoryEntry;
LONG    GetDeletedEntry;
LONG    GetOriginalNameSpace;
LONG    GetActualFileSize;
LONG    VerifyNameSpaceNumber;
LONG    VerifyDataStreamNumber;
LONG    CheckVolumeNumber;
LONG    CommitFile;
LONG    VMGetDirectoryEntry;
LONG    CreateDMFileEntry;
LONG    RenameNameSpaceEntry;
LONG    LogFile;
LONG    ReleaseFile;
LONG    ClearFile;
LONG    SetVolumeFlag;
LONG    ClearVolumeFlag;
LONG    GetOriginalInfo;
LONG    CreateMigratedDir;
LONG    F3OpenCreate;
LONG    F3InitFileSearch;
LONG    F3ContinueFileSearch;
LONG    F3RenameFile;
LONG    F3ScanForTrustees;
LONG    F3ObtainFileInfo;
LONG    F3ModifyInfo;
LONG    F3EraseFile;
LONG    F3SetDirHandle;
LONG    F3AddTrustees;
LONG    F3DeleteTrustees;
LONG    F3AllocDirHandle;
LONG    F3ScanSalvagedFiles;
LONG    F3RecoverSalvagedFiles;
LONG    F3PurgeSalvageableFile;
LONG    F3GetNSSpecificInfo;
LONG    F3ModifyNSSpecificInfo;
```

```
        LONG   F3SearchSet;
        LONG   F3GetDirBase;
        LONG   F3QueryNameSpaceInfo;
        LONG   F3GetNameSpaceList;
        LONG   F3GetHugeInfo;
        LONG   F3SetHugeInfo;
        LONG   F3GetFullPathString;
        LONG   F3GetEffectiveDirectoryRights;
        LONG   ParseTree;
}LFSCountersStructure;
```

Each field in this structure indicates the number of times a given OS code path is taken.

Server-Based TTS Concepts

12

This documentation provides and overview of Server-Based TTS Services concepts, its functions, and features

The NetWare® Transaction Tracking System (TTS) feature ensures data integrity on files that otherwise would be corrupted when updates on the files are interrupted by such things as hardware failures or power outages. A transaction is defined as a set of one or more operations that must be completed together to maintain file and database integrity. TTS guarantees that all writes within a transaction are completed or none are completed.

A banking database application frequently performs a transaction that includes three writes to database files: a debit to one account, a credit to another account, and a note to a log. The application must complete all three writes to maintain database integrity. However, hardware or power failure can interrupt such a transaction, causing database corruption.

Servers running NetWare 3.x and above can track transactions and ensure file integrity by backing out (or erasing) interrupted or partially completed transactions. TTS tracks only transactions to transactional files. A file becomes transactional when the files transactional extended file attribute is set.

12.1 Transaction Process

The following steps describe how TTS tracks each write within a transaction:

1. An application writes new data to a file on a server.

2. The server stores the new data in cache memory. The target file on the servers hard disk remains unchanged.

3. The server scans the target file on the servers hard disk, finds the data to be changed (old data), and copies the old data to cache memory. The server also records the name and directory path of the target file and the location and length of the old data (record) within the file. The target file on the servers hard disk remains unchanged.

4. The server writes the old data in cache memory to a transaction work file on the servers hard disk. The transaction work file resides at the root level of the SYS volume on the server. The file is flagged System and Hidden. The target file on the servers hard disk remains unchanged.

5. The server writes the new data in cache memory to the target file on the servers hard disk. The target file is now changed.

The server repeats these steps for each write within a transaction. The transaction work file grows to accommodate the old data for each write. If the transaction is interrupted, the server writes the contents of the transaction work file to the target file, thereby restoring the file to pretransaction condition. In effect, the server backs out the transaction.

A server can monitor from 1 to 10,000 transactions. The maximum value is configurable and can be set from 1 to 10,000. A server can track only one transaction at a time for each unique connection number/task number pair.

12.2 Transaction Tracking

Transactions are divided into two categories:

Implicit transaction tracking requires no coding on the part of an application developer. If TTS is enabled on a server, TTS tracks all transactions to all transactional files (including transactions made by NetWare to Bindery files).

Explicit transaction tracking requires applications to make TTS calls and allows applications to neatly bracket file update sequences with locking and TTS calls. An application would most likely use logical or physical record locks with TTS functions. Almost all applications should work correctly with TTS implicit or explicit transactions, or be easily adapted to do so. However, the following TTS record locking features could adversely affect certain applications:

- Physical and logical record locks remain in force until the end of the transaction.
- Records unlocked in the middle of a transaction are usually held until the transaction completes.
- The server automatically generates a physical lock when a record is written if the record is not yet locked.

NOTE: Transactions are tracked and evaluated by connection number and task number. Therefore, in order for transactions on a file to be monitored, the thread must have its connection and task numbers set to the same connection and task numbers that were used to open the file. (Remember, setting the connection and task number for one thread changes the connection and task numbers for all of the threads that belong to the same thread group.)

12.2.1 Implicit Transaction Tracking

Implicit transaction tracking is designed to work transparently with existing multiuser software that uses record locking (physical or logical). All the user must do is flag the multiuser database files as transactional; everything else is automatic. However, implicit transactions are not guaranteed to work with all multiuser applications. For example, applications that do not synchronize file updates exclusively with record locks and applications that synchronize updates improperly might not work.

Applications that always keep one or more records locked should set lock thresholds:

- Application thresholds are valid only until the next end-of-job on the current connection. When the next end-of-job occurs (normally when a workstation application ends), the application thresholds are set to the current workstation thresholds. This is meaningful only in a client-server NLM application that uses the clients connection number for transactions. Application thresholds can be set using TTSSetApplicationThresholds.
- Workstation thresholds are valid not only for the requesting application but for all applications at the requesting workstation and all NLM applications using the same connection number as the callers current connection number. The threshold values are not reset when the application terminates (that is, when an end-of-job occurs). Workstation thresholds can be set using TTSSetWorkstationThresholds. Workstation users normally execute SETTTS.EXE to set workstation thresholds.

12.2.2 Explicit Transaction Tracking

Explicit transaction tracking has an advantage over implicit transaction tracking in that it allows applications to determine precisely when updates within the transaction are written to disk.

In addition, TTSBeginTransaction and TTSEndTransaction within the application allow the developer to identify the beginning and end-of-file update sequences. Identifying the beginning and end-of-file update sequences makes it easier for applications to group file updates and practice correct record locking practices. Correct record locking practices include locking and unlocking records as a group to avoid deadlock, and not leaving records locked exclusively while waiting for keyboard input.

12.3 Record Locking

Record locking provides security and data protection during transactions. If a record is not locked by an application but is written to during a transaction, the server physically locks that record automatically. This physical lock remains in force until the transaction is completed. Physically locking written records is an added protection that prevents other NLM applications and workstations from examining or modifying them while they are being Changed. The server usually holds logical and physical record locks on a file until the end of the transaction, even if the file is unlocked by an NLM before the transaction is completed.

For example, if an NLM requests an unlock before a transaction is completed, it receives an ESUCCESS completion code indicating that the records are unlocked; however, the lock is actually held until the transaction is complete. The one exception to this is a file that is not updated while the lock is in force. A request to unlock such a record is honored.

The server delays record unlocking because the data controlled by the locks could still be changed by a transaction backout. Thus, the server guarantees that other NLM applications and workstations do not see data that is being changed until those changes are final. If multiple stations attempt to change a file, only the first station is allowed to make the change. Usually, multiuser software synchronizes the records and prevents other NLM applications and workstations from examining records that are being changed.

If an NLM or workstation attempts to read from or write to a record that is physically locked by the server, the NLM or workstation gets a locked error. This means that applications that use logical record locks can potentially get unexpected physical lock errors. However, because unlocking logical records is also delayed during a file write, unexpected errors should never occur if the logical record synchronization is correct. The logical record locks keep other workstations away from the physically locked records.

It is important to point out that in a environment that is not TTS it is valid to unlock some updated records in the middle of a transaction if they have been completely updated. In a TTS environment, however, those records cannot be unlocked because they can still be changed-not by the application but by a transaction backout.

12.4 Transaction Backouts

Transactions are backed out because of system failures resulting from hardware problems and power outages at a workstation or the server. But backouts also occur because of problems with applications running on a workstation, or because of user intervention at a workstation:

- "Causes of Transaction Backout" on page 594

12.4.1 Causes of Transaction Backout

Some common causes for a transaction backout are listed below:

- An application terminates while a transaction is in progress (a begin transaction with no end transaction). For example, the user may enter a Ctrl+C.
- After terminating, a workstation application leaves records locked.
- There has been no activity from a station for 15 minutes. If a server does not receive packets from one of the workstations listed in its File Server ID Table for more than 5 minutes, it sends a watchdog packet to that station. If the station does not respond, the server continues to send a packet every minute for 15 minutes.
- After 15 minutes, if the workstation still does not respond, the server logs it out. Usually lack of response from a workstation indicates a power failure, software hang, a problem with an intermediate network route, and so on.
- A station reattaches to the same server after rebooting and reloading the shell. If the station attaches to a different server after a reboot, the server watchdog process reinitializes the station after 5 minutes.
- A CLEAR STATION or a DOWN command is issued at the server system console.
- The server crashes due to a hardware, software, or power problem.

12.4.2 Solutions for Transaction Backout

The following are some general suggestions of how to recover when a workstation or server that goes down and therefore backs out a transaction.

Workstation

When a workstation goes down in the middle of a transaction, the user may not know exactly which transaction was completed and which was backed out. However, unless the application is multitasking, it should have only one transaction active at the time of the crash. Even if a workstation goes down, transactions that were completed but not yet written to disk are written to disk and not backed out.

If the station goes down and transactions were backed out, the user must ensure that the last transaction was completed, or if it was not completed, do it over again. The transaction could be partially completed if the application incorrectly used several transactions per operation. The following message appears at the server console if transactions were backed out:

```
Transaction being backed out for station ##.
```

This message is given at the server console if a transaction is backed out for any reason other than a TTSAbortTransaction from the application. Note that if the station had several tasks active, several messages are given. The DOWN server console command can force several of these messages to be issued.

If a workstation goes down and cannot be brought back up, the user should issue a CLEAR STATION command at the server console. Besides affecting TTS, the downed station keeps its records locked, which may affect other stations. If the CLEAR STATION command is not issued, the server watchdog process clears out the station after 15 minutes.

Server

Unlike the workstation, if the server goes down before transactions have been written to the disk, it backs out any incomplete transactions when it is rebooted. If your server does go down and files are backed out, a message is issued at the server console indicating the number of transactions that need to be backed out.

This message appears when the server is being brought up (while the affected volumes are being mounted). The transaction tracking software has detected that some of the transactions were not completed before the server went down. You should not see this message *unless the server went down abnormally*.

After bringing up a server that went down, the user is responsible for determining which updates were completed and which were backed out and need to be repeated. A good practice is to verify that the last few changes were actually made. Remember that most transactions should be committed to disk within 3 to 5 seconds of being completed. However, any operation completed within 10 seconds of a failure should be examined. After the server is brought up, a good practice is to have the workstation operators review their last operation. If it is not completed, they should also review the next to last operation, and so on.

If TTSTransactionStatus is used by the application, the user has a better idea of when transactions were actually completed. However, the fact that the application thought that a transaction was not completed does not mean that it was not. The transaction could have been completed between the last time the application checked and the time the server crashed.

12.5 Disable/Enable Transaction Tracking

Transaction tracking can be disabled or enabled from the server console with the commands Disable Transactions and Enable Transactions. However, even when transaction tracking is disabled, tracking occurs in a partial way:

- TTSBeginTransaction and TTSEndTransaction still denote transactions and work correctly.
- TTSTransactionStatus still returns the correct status.

If TTS is disabled, the only loss to explicit and implicit transaction calls is the capability of backing out incomplete transactions. For example, if a server or workstation fails while transaction tracking is disabled, you cannot back out because the backout information was not saved, and the database could be corrupted.

When transaction tracking is re-enabled at the system console, backout capability is provided only to new transactions. Transactions that are in progress when transaction tracking is reenabled do not have backout, and the possibility of file corruption still exists until these unprotected transactions are completed and written to disk. It is important to note that a transaction can be backed out if the workstation or NLM does not write to a transaction file after transactions are disabled. If a workstation or NLM does a write after transactions are disabled, the transaction is invalidated and any previous backout information for that transaction is ignored.

12.5.1 Disable Transactions

Disable Transactions is a server console command that turns off TTSs backout capability. Any transactions written after transactions have been disabled cannot be backed out. A transaction that has not written anything since transactions were disabled can still be backed out while transactions are disabled. Normally, this command is used only for testing.

12.5.2 Enable Transactions

Enable Transactions is a server console command that re-enables TTS. Any previous transaction backout information is erased, except those that were active at the time transactions were disabled and did not write anything. (These transactions are not erased and can still be backed out.)

12.6 Functions

The following table lists the Transaction Tracking System Functions

TTSAbortTransaction	Aborts explicit and implicit transactions
TTSBeginTransaction	Begins an explicit transaction
TTSEndTransaction	Ends an explicit or implicit transaction and returns a transaction reference number
TTSGetApplicationThresholds	Returns the current connections application thresholds for implicit transactions
TTSGetWorkstationThresholds	Returns the current connections workstation thresholds for implicit transactions
TTSIsAvailable	Verifies whether the default server supports transaction tracking
TTSSetApplicationThresholds	Sets the current connections application thresholds for implicit transactions
TTSSetWorkstationThresholds	Sets the current connections workstation thresholds for implicit transactions
TTSTransactionStatus	Verifies whether a transaction has been written to disk

Server-Based TTS Functions

13

This documentation alphabetically lists the Server-Based TTS functions and describes their purpose, syntax, parameters, and return values.

TTSAbortTransaction

Aborts explicit transactions (For cross-platform functionality, see Developing NLMs with Cross-Platform Functions (*NDK: NLM Development Concepts, Tools, and Functions*) and call NWTTSAbortTransaction (page 367).)

Local Servers: blocking

Remote Servers: blocking

NetWare Server: 3.x, 4.x, 5.x, 6.x

Platform: NLM

Service: Server-Based TTS

Syntax

```
#include <\nlm\nit\nwtts.h>

int TTSAbortTransaction (void);
```

Return Values

Decimal	Hex	Constant
0	(0x00)	ESUCCESS
253	(0xFD)	ERR_TTS_DISABLED
		Transaction could not be ended because the Transaction Tracking System™ (TTS™) is disabled.
254	(0xFE)	ERR_TRANSACTION_ENDS_RECORDS_LOCKED
		Transaction was ended abnormally, but records were left locked.
255	(0xFF)	ERR_NO_EXPLICIT_TRANSACTION_ACTIVE

Remarks

When this function returns, the transaction has been successfully backed out. When a transaction is backed out, any writes to the file are aborted, and the file is returned to the state it was in before the transaction began.

This function releases the following physical record locks:

- Physical record locks generated by TTS when a write operation is performed on a nonlocked record
- Physical record locks that are not yet released because of a file write

For explicit transactions, the transaction is backed out, and any locks being held are released.

If implicit transactions are enabled and the number of logical or physical records still locked by the application exceeds the threshold, this function returns a value of 0xFE. In this case, the transaction is backed out, and the server automatically starts a new implicit transaction.

See Also

TTSBeginTransaction (page 600), TTSEndTransaction (page 602), TTSIsAvailable (page 608), TTSTransactionStatus (page 613)

TTSBeginTransaction

Begins an explicit transaction (For cross-platform functionality, see Developing NLMs with Cross-Platform Functions (*NDK: NLM Development Concepts, Tools, and Functions*) and call NWTTSBeginTransaction (page 369).)

Local Servers: blocking

Remote Servers: blocking

NetWare Server: 3.x, 4.x, 5.x, 6.x

Platform: NLM

Service: Server-Based TTS

Syntax

```
#include <\nlm\nit\nwtts.h>

int TTSBeginTransaction (void);
```

Return Values

Decimal	Hex	Constant
0	(0x00)	ESUCCESS
150	(0x96)	ERR_SERVER_OUT_OF_MEMORY
254	(0xFE)	ERR_IMPLICIT_TRANSACTION_ACTIVE
		Converted to an explicit transaction.
255	(0xFF)	ERR_EXPLICIT_TRANSACTION_ACTIVE

Remarks

After TTSBeginTransaction is called, TTS tracks all files that are marked transactional and are currently open as well as transactional files that are opened during the transaction. When an application writes to a transaction file, the server automatically generates a physical record lock for that file. If the record is already locked, the server does not generate an additional lock.

Transaction files are not closed and unlocked until a TTSEndTransaction or TTSAbortTransaction is executed.

If transaction files are updated, logical and physical record locks are held until the end of the transaction. If a transaction file is not updated, any logical or physical lock on that file can be released at any time.

NOTE: Transactions are tracked and evaluated by connection number and task number. Therefore, in order for transactions on a file to be monitored, the thread must have its connection and task numbers set to the same connection and task numbers that were used to open the file. (Remember,

setting the connection and task number for one thread changes the connection and task numbers for all of the threads that belong to the same thread group.)

See Also

TTSAbortTransaction (page 598), TTSEndTransaction (page 602), TTSIsAvailable (page 608), TTSTransactionStatus (page 613)

TTSEndTransaction

Ends an explicit transaction and returns a transaction reference number (For cross-platform functionality, see Developing NLMs with Cross-Platform Functions (*NDK: NLM Development Concepts, Tools, and Functions*) and call call NWTTSEndTransaction (page 371).)

Local Servers: blocking

Remote Servers: blocking

NetWare Server: 3.x, 4.x, 5.x, 6.x

Platform: NLM

Service: Server-Based TTS

Syntax

```
#include <\nlm\nit\nwtts.h>

int TTSEndTransaction (
   long    *transactionNumber);
```

Parameters

transactionNumber

(OUT) Receives the transaction reference number of the ended transaction.

Return Values

Decimal	Hex	Constant
0	(0x00)	ESUCCESS
253	(0xFD)	ERR_TTS_DISABLED
		Transaction could not be ended because TTS is disabled.
254	(0xFE)	ERR_TRANSACTION_ENDS_RECORDS_LOCKED
		Transaction was ended abnormally, but records were left locked. This error is only for implicit transactions.
255	(0xFF)	ERR_EXPLICIT_TRANSACTION_ACTIVE

Remarks

A transaction is not necessarily completed to disk when this function returns. If the server fails before all transaction updates are written to disk, the transaction is backed out when the server is rebooted.

TTSTransactionStatus verifies a successful transaction completion to disk; or, if transaction tracking is disabled, the reference number can used to determine when the transaction is completely written to disk.

This function releases the following physical record locks:

- Physical record locks generated by TTS when a write operation is performed on a nonlocked record
- Physical or logical locks that have not yet been released because of a transaction

For explicit transactions, the transaction is completed and any locks being held are released.

If implicit transactions are enabled and the number of logical or physical records still locked by the application exceeds the threshold, this function returns a value of 0xFE. In this case, the server automatically starts a new implicit transaction. However, the explicit transaction is still completed and any locks being held are released.

See Also

TTSAbortTransaction (page 598), TTSBeginTransaction (page 600), TTSIsAvailable (page 608), TTSTransactionStatus (page 613)

TTSGetApplicationThresholds

Returns the current connection's application thresholds for implicit transactions (For cross-platform functionality, see Developing NLMs with Cross-Platform Functions (*NDK: NLM Development Concepts, Tools, and Functions*) and call call NWTTSGetConnectionThresholds (page 373).)

Local Servers: blocking

Remote Servers: blocking

NetWare Server: 3.x, 4.x, 5.x, 6.x

Platform: NLM

Service: Server-Based TTS

Syntax

```
#include <\nlm\nit\nwtts.h>

int TTSGetApplicationThresholds (
   BYTE   *logicalRecordLockThreshold,
   BYTE   *physicalRecordLockThreshold);
```

Parameters

logicalRecordLockThreshold

(OUT) Receives the number of logical record locks allowed before an implicit transaction begins (0 to 255).

physicalRecordLockThreshold

(OUT) Receives the number of physical record locks allowed before an implicit transaction begins (0 to 255).

Return Values

Decimal	Hex	Constant
0	(0x00)	ESUCCESS
NetWare® Error		UNSUCCESSFUL

Remarks

This function allows an application to get the number of logical and physical record locks allowed before an implicit transaction begins for the current connection.

This function and the TTSSetApplicationThresholds function are useful for applications that change the implicit application thresholds and later want to restore them.

For example, TTSGetApplicationThresholds can query an application for the number of logical and physical record locks allowed before an implicit transaction begins.

TTSSetApplicationThresholds can then do one of the following:

- Turn off implicit transactions.
- Set implicit thresholds for applications that always keep one or more records locked.

Applications that intend to use only explicit transactions, but sometimes generate unnecessary implicit transactions, would need to turn off all implicit transactions.

The default threshold for logical and physical locks is 0. A threshold of 0xFF means there are not implicit transactions for that lock type.

The thresholds returned by this function are valid for the requesting application only. When the application terminates, the workstation thresholds are restored. This is only meaningful in a client-server NLM™ application that uses the client's connection number for transactions. Whenever the client's workstation generates an end-of-job (normally when a workstation application ends), the TTS application thresholds are reset to the TTS workstation thresholds.

See Also

TTSGetWorkstationThresholds (page 606), TTSSetApplicationThresholds (page 609), TTSSetWorkstationThresholds (page 611)

TTSGetWorkstationThresholds

Returns the current connection's workstation thresholds for implicit transactions

Local Servers: blocking

Remote Servers: blocking

NetWare Server: 3.x, 4.x, 5.x, 6.x

Platform: NLM

Service: Server-Based TTS

Syntax

```
#include <\nlm\nit\nwtts.h>

int TTSGetWorkstationThresholds (
   BYTE    *logicalRecordLockThreshold,
   BYTE    *physicalRecordLockThreshold);
```

Parameters

`logicalRecordLockThreshold`

(OUT) Specifies the number of logical record locks allowed before an implicit transaction begins (0 to 255).

`physicalRecordLockThreshold`

(OUT) Specifies the number of physical record locks allowed before an implicit transaction begins (0 to 255).

Return Values

Decimal	Hex	Constant
0	(0x00)	ESUCCESS
NetWare Error		UNSUCCESSFUL

Remarks

This function allows an application to get the number of logical and physical record locks allowed before an implicit transaction begins for the current connection.

This function and TTSSetWorkstationThresholds are useful for applications that want to set the thresholds semi-permanently (until the next time TTSSetWorkstationThresholds is called).

For example, TTSGetWorkstationThresholds can get the number of logical and physical locks, and TTSSetWorkstationThresholds can do one of the following:

- Turn off implicit transactions.

- Set implicit thresholds for applications that always keep one or more records locked.

Applications that use only explicit transactions, but sometimes generate unnecessary implicit transactions, can turn off all implicit transactions.

The default threshold for logical and physical locks is 0. A threshold of 0xFF means there are no implicit transactions for that lock type.

The threshold values set by TTSSetWorkstationThresholds are not reset when a workstation application terminates (that is, when an end-of-job occurs). In other words, all applications on the requesting workstation share these same thresholds.

Workstation users normally execute SETTTS.EXE to set workstation thresholds.

See Also

TTSSetWorkstationThresholds (page 611)

TTSIsAvailable

Reports whether the server has transaction tracking enabled (For cross-platform functionality, see Developing NLMs with Cross-Platform Functions (*NDK: NLM Development Concepts, Tools, and Functions*) and call call NWTTSIsAvailable (page 379).)

Local Servers: nonblocking

Remote Servers: blocking

NetWare Server: 3.x, 4.x, 5.x, 6.x

Platform: NLM

Service: Server-Based TTS

Syntax

```
#include <\nlm\nit\nwtts.h>

int TTSIsAvailable (void);
```

Return Values

Decimal	Hex	Constant
1	(0x01)	TTS_AVAILABLE
253	(0xFD)	ERR_TTS_DISABLED: TTS is available but is presently disabled.

Remarks

The NetWare 3.x and 4.x OS always supports TTS, but TTS can be disabled.

TTSSetApplicationThresholds

Sets the current connection's application thresholds for implicit transactions (For cross-platform functionality, see Developing NLMs with Cross-Platform Functions (*NDK: NLM Development Concepts, Tools, and Functions*) and call and call NWTTSSetConnectionThresholds (page 381).)

Local Servers: nonblocking

Remote Servers: blocking

NetWare Server: 3.x, 4.x, 5.x, 6.x

Platform: NLM

Service: Server-Based TTS

Syntax

```
#include <\nlm\nit\nwtts.h>

int TTSSetApplicationThresholds (
   BYTE    logicalRecordLockThreshold,
   BYTE    physicalRecordLockThreshold);
```

Parameters

logicalRecordLockThreshold

(IN) Specifies the maximum number of logical locks that can be held without starting a transaction.

physicalRecordLockThreshold

(IN) Specifies the maximum number of physical locks that can be held without starting a transaction.

Return Values

Decimal	Hex	Constant
0	(0x00)	ESUCCESS
NetWare Error		UNSUCCESSFUL

Remarks

The thresholds set by this function are valid only until the next end-of-job on the current connection. When the next end-of-job occurs, the application thresholds are set to the current workstation thresholds.

This function is useful for either turning off implicit transactions or allowing applications to work that always keep one or more records locked. For example, applications that use only explicit

transactions, but sometimes generate unnecessary implicit transactions, can use this function to turn off all implicit transactions.

The default threshold for logical and physical locks is 0. A threshold of 0xFF means there are no implicit transactions for that lock type.

The thresholds set by this function are valid for the requesting application only. When the application terminates, the workstation thresholds are restored. This is only meaningful in a client-server NLM that uses the client's connection number for transactions. Whenever the client's workstation generates an end-of-job (normally when a workstation application ends), the TTS application thresholds are reset to the TTS workstation thresholds.

See Also

TTSGetApplicationThresholds (page 604)

TTSSetWorkstationThresholds

Sets the current connection's workstation thresholds for implicit transactions

Local Servers: blocking

Remote Servers: blocking

NetWare Server: 3.x, 4.x, 5.x, 6.x

Platform: NLM

Service: Server-Based TTS

Syntax

```
#include <\nlm\nit\nwtts.h>

int TTSSetWorkstationThresholds (
   BYTE   logicalRecordLockThreshold,
   BYTE   physicalRecordLockThreshold);
```

Parameters

`logicalRecordLockThreshold`

   (IN) Specifies the number of logical record locks allowed before an implicit transaction begins (0 to 255).

`physicalRecordLockThreshold`

   (IN) Specifies the number of physical record locks allowed before an implicit transaction begins (0 to 255).

Return Values

Decimal	Hex	Constant
0	(0x00)	ESUCCESS
NetWare Error		UNSUCCESSFUL

Remarks

The thresholds set by this function are valid not only for the requesting application, but for all applications at the requesting workstation and for all NLM applications using the same connection number as the caller's current connection number. This function is useful for either turning off implicit transactions or allowing applications to work that always keep one or more records locked.

For example, applications that intend to use only explicit transactions but which sometimes generate unnecessary implicit transactions can use this function to turn off all implicit transactions.

The default threshold for logical and physical locks is 0. A threshold of 0xFF means there are no implicit transactions for that lock type.

The threshold values set by this function are not reset when a workstation application terminates. In other words, all applications on the requesting workstation share these thresholds.

Workstation users normally execute SETTTS.EXE to set workstation thresholds.

See Also

TTSGetWorkstationThresholds (page 606)

TTSTransactionStatus

Verifies whether a transaction has been written to disk (For cross-platform functionality, see Developing NLMs with Cross-Platform Functions (*NDK: NLM Development Concepts, Tools, and Functions*) and call call NWTTSTransactionStatus (page 387).)

Local Servers: blocking

Remote Servers: blocking

NetWare Server: 3.x, 4.x, 5.x, 6.x

Platform: NLM

Service: Server-Based TTS

Syntax

```
#include <\nlm\nit\nwtts.h>

int TTSTransactionStatus (
   long    transactionNumber);
```

Parameters

transactionNumber

(IN) Specifies the transaction reference number returned from the TTSEndTransaction function.

Return Values

Decimal	Hex	Constant
0	(0x00)	ESUCCESS
255	(0xFF)	TRANSACTION_NOT_YET_WRITTEN

Remarks

This function verifies whether a transaction has been written to disk, even if TTSEndTransaction returned ERR_TTS_DISABLED.

This function uses the `transactionNumber` parameter that contains a number assigned and used by the NetWare operating system to track each transaction. The `transactionNumber` is obtained through a call to TTSEndTransaction.

Because of the server caching algorithms, it can be 3 to 5 seconds or longer before transactions are actually written. Transactions are completed to disk in the order in which they are ended.

See Also

TTSEndTransaction (page 602)

Revision History

A

The following table outlines all the changes that have been made to the Server Management documentation (in reverse chronological order).

October 11, 2006	Updated links.
March 1, 2006	Updated format.
December 6, 2005	Updated NWSMLoadNLM2 (page 344).
October 5, 2005	Transitioned to revised Novell documentation standards.
March 2, 2005	Fixed legal information.
June 9, 2004	Added some information to VERSION_INFO (page 316) .
July 30, 2003	Fixed the Delphi syntax for NWFSE_MLID_BOARD_INFO (page 263).
June 2003	Added information to SSGetMediaManagerObjChildList (page 531). Added NLM Type information to NLM_INFO (page 223) and SSGetNLMInfo (page 548). Removed the obsolete label from the SS... functions. Changed references to Pascal to Delphi. Modified the Delphi syntax for NWFSE... structures to add padding.
October 2002	Modified the Pascal syntax in the structures.
	Marked all SS... functions as obsolete. Added additional information to SSGetFileServerInfo (page 495) and SSGetUserInfo (page 581).
September 2002	Added Ethernet frame information to the MLID_BOARD_INFO (page 220) structure and tick information to the SERVER_AND_VCONSOLE_INFO (page 306) structure.
May 2002	Added information about the CPUNum in NWGetCPUInfo (page 53) and the Pentium Pro value for CPUTypeFlag in CPU_INFO (page 182).
February 2002	Added information about the netWareVersion and netwareSubVersion values to GetServerInformation (page 468).
	Updated links.
October 2001	Updated Pascal syntaxes for NWEnumNetAddresses (page 41), NWGetMLIDBoardInfo (page 110), NWEnumNetAddresses (page 41), NWGetServerConnInfo (page 143), MLID_BOARD_INFO (page 220), NWFSE_ACCT_INFO (page 226), NWFSE_AUTH_INFO (page 233), NWFSE_LOCK_INFO (page 253), NWFSE_LOGIN_NAME (page 254), NWFSE_LOGIN_TIME (page 255), NWFSE_NETWORK_ADDRESS (page 264), NWFSE_MLID_BOARD_INFO (page 263), NWFSE_PRINT_INFO (page 276), NWFSE_STATS_INFO (page 289), and VOLUME_INFO_BY_LEVEL (page 319).
	Fixed typographical errors.

September 2001	Added NetWare 6.0 support to documentation.
	Updated NWGetServerConnInfo (page 143), SSGetMediaManagerObjList (page 539), NWFSE_AUTH_INFO (page 233), NWFSE_MEDIA_MGR_OBJ_LIST (page 260), and NWFSE_PRINT_INFO (page 276).
	Fixed typographical errors.
	Added descriptions to graphics.
June 2001	Updated tables and fixed typographical errors.
February 2001	Corrected #include syntax entry by adding nit\ in front of the nwservst.h file reference for all SSGet... functions in the Chapter 11, "Server-Based Server Environment Functions," on page 395. Added Delphi (Pascal) syntax to functions where missing.
	Changed the referenced structure in NWGetLANCommonCountersInfo (page 89) to NWFSE_LAN_COMMON_COUNTERS_INFO (page 248).
	Added a note to NWFSE_NETWORK_ADDRESS (page 264) about the declaration of address types 1 and 2 being different from the standard NDS declaration of network address types.
July 2000	Added documentation on the new function NWGetNetWareProductVersion (page 114) and the associated structure NETWARE_PRODUCT_VERSION (page 222). Also, updated documentation for the two functions: NWGetFileServerVersionInfo (page 74) and NWGetOSVersionInfo (page 128).
May 2000	Changed numberOfRecords of CONN_USING_FILE_REPLY_386 in GetConnectionsUsingFile (page 427) from a BYTE to a WORD per the updated nlm/nit/nwenvrn1.h file.
	Changed some field descriptions in FSE_MM_OBJ_INFO (page 198).
March 2000	Added field definitions for FSE_FILE_SYSTEM_INFO (page 196), VOLUME_INFO_BY_LEVEL_DEF (page 320), and VOLUME_INFO_BY_LEVEL_DEF2 (page 325).
	Moved Server-Based Auditing Concepts, Bindery-Based Accounting Concepts and Bindery-Based Accounting Functions to Network Management.
	Changed fourth possible value of retInfoMask in NWGetServerConnInfo (page 143) to CONN_INFO_LOGIN_NAME_MASK. Also, changed the third parameter of NWFSE_LOGIN_NAME (page 254) to be a pointer.
	Added statement to NWGetServerConnInfo (page 143) about having to allocate memory for networkAddress or the server might abend.
January 2000	Updated the Remarks section of NWGetNLMLoadedList (page 124) to indicate the correct starting value of startNum.
	Changed the corresponding cross-platform function for GetServerInformation (page 468) to NWGetFileServerVersionInfo (page 74).
	Changed Return Values for TTSIsAvailable (page 608).

November 1999	Added library information to each function.
	Added Remarks statements in NWGetMLIDBoardInfo (page 110) about the limit of one protocol per board in NetWare 4.x and that 0x89FF is returned if no protocols are bound to the specified board.
	Added possible protocol names, numbers, and IDs for MLID_BOARD_INFO (page 220).
September 1999	Removed NetWare 3.x as a supported platform from NWSMLoadNLM (page 342) and NWSMUnloadNLM (page 353). These functions use NCP 131 1 and 131 2, which work only on NetWare 4.x and above.
	Removed 0x009E as a return value for NWSMLoadNLM (page 342).
	Changed serverType to an IN parameter in NWGetKnownServersInfo (page 87).
	Changed lastRecord and lastTask to be IN/OUT parameters in GetConnectionSemaphores (page 415).
	Changed the addressType values of NWFSE_NETWORK_ADDRESS (page 264) to 1 IPX, 2 IP, 8 UDP, and 9 TCP.
July 1999	Removed NW_FS_INFO and NW_DYNAMIC_MEM structures, which were used only by NWGetFilServerMiscInfo (2.x only function).
June 1999	Added NWGenerateGUIDs (page 43).
	Added NWGetMLIDBoardInfo (page 110) and related NWFSE_MLID_BOARD_INFO (page 263) and MLID_BOARD_INFO (page 220) structures.
	Added NWEnumNetAddresses (page 41) and related NW_GUID (page 294) structure.
	Added NWGetServerConnInfo (page 143) and related NWFSE_ACCT_INFO (page 226), NWFSE_AUTH_INFO (page 233), NWFSE_LOCK_INFO (page 253), NWFSE_LOGIN_NAME (page 254), NWFSE_LOGIN_TIME (page 255), NWFSE_NETWORK_ADDRESS (page 264), NWFSE_PRINT_INFO (page 276), and NWFSE_STATS_INFO (page 289) structures.