Chapter 22 NetBIOS Command Reference

This chapter lists and describes the valid commands for the ncb_command field of the NCB structure that you must pass to the Netbios function. Each command description includes a table that indicates which fields of the NCB structure you must set for that command and which fields the Netbios function sets prior to returning. Each table contains two columns. The first column indicates whether the given field of the NCB structure is an input or output parameter. The second column indicates whether the field must be set when making a NetBIOS call. If this column is marked with an X, a value must be provided. Otherwise, if the field is an input parameter and no X is present, providing a value is optional. Please refer to Chapter 17 for an in-depth discussion of the Netbios function.

22.1 NCBADDGRNAME

This command adds a group name to the local name table. This name cannot collide with a unique name, but anyone else can use it as a group name. Group names are most often used as recipients of datagrams. A name number is returned in the ncb_num field that is used in datagram operations. Table 22-1 describes the characteristics of the NCBADDGRNAME command.

Table 22-1 *NCBADDGRNAME*

Field	In/Out	Required
ncb_command	In	X
ncb_retcode	Out	
ncb_lsn		
ncb_num	Out	
ncb_buffer		
ncb_length		
ncb_callname		
ncb_name	In	X
ncb_rto		
ncb_sto		
ncb_post	In	
ncb_lana_num	In	X
ncb_cmd_cplt	Out	
ncb_event	In	

22.2 NCBADDNAME

This command adds a unique name to the local name table. This name must be unique across the network, or an error is returned. A name number is returned in the ncb_num field that is used in datagram operations. Table 22-2 describes the characteristics of the NCBADDNAME command.

Table 22-2 *NCBADDNAME*

Field	In/Out	Required
ncb_command	In	X
ncb_retcode	Out	
ncb_lsn		
ncb_num	Out	
ncb_buffer		
ncb_length		

ncb_callname		
ncb_name	In	X
ncb_rto		
ncb_sto		
ncb_post	In	
ncb_lana_num	In	X
ncb_cmd_cplt	Out	
ncb_event	In	

22.3 NCBASTAT

This command retrieves the status of a local or remote adapter. When you call this command, set ncb_buffer to point to a buffer that has an ADAPTER_STATUS structure followed by an array of NAME_BUFFER structures. Table 22-3 describes the characteristics of the NCBASTAT command.

Table 22-3 *NCBASTAT*

Field	In/Out	Required
ncb_command	In	X
ncb_retcode	Out	
ncb_lsn		
ncb_num		
ncb_buffer	In/Out	X
ncb_length	In/Out	X
ncb_callname	In	X
ncb_name		
ncb_rto		
ncb_sto		
ncb_post	In	
ncb_lana_num	In	X
ncb_cmd_cplt	Out	
ncb_event	In	

22.4 NCBCALL

This command connects (opens) a session to another process that you indicate in the ncb_name field. Table 22-4 describes the characteristics of the NCBCALL command.

Table 22-4 *NCBCALL*

Field	In/Out	Required

ncb_command	In	X
ncb_retcode	Out	
ncb_lsn	Out	
ncb_num		
ncb_buffer		
ncb_length		
ncb_callname	In	X
ncb_name	In	X
ncb_rto	In	
ncb_sto	In	
ncb_post	In	
ncb_lana_num	In	X
ncb_cmd_cplt	Out	
ncb_event	In	

22.5 NCBCANCEL

This command cancels a previous outstanding command. The ncb_buffer field points to the NCB structure with the operation that you want canceled. Canceling an NCBSEND or NCBCHAINSEND command aborts the session; however, aborting their no-ack variants does not cancel their respective sessions. The following commands cannot be canceled: NCBADDGRNAME, NCBADDNAME, NCBCANCEL, NCBDELNAME, NCBRESET, NCBDGSEND, NCBDGSENDBC, and NCBSSTAT. Table 22-5 describes the characteristics of the NCBCANCEL command.

Table 22-5 *NCBCANCEL*

Field	In/Out	Required
ncb_command	In	X
ncb_retcode	Out	
ncb_lsn		
ncb_num		
ncb_buffer	In	X
ncb_length		
ncb_callname		
ncb_name		
ncb_rto		
ncb_sto		
ncb_post		
ncb_lana_num	In	X

ncb_cmd_cplt	Out	
ncb_event		

22.6 NCBCHAINSEND

This command sends the contents of two buffers to the specified receiver. The maximum amount of data that can be sent is 128 KB (a maximum of 64 KB in each buffer). Use ncb_buffer and ncb_length to point to the first buffer and specify its length. Use bytes 0–1 of ncb_callname to specify the length of the second buffer, and use bytes 2–5 to point to it. Table 22-6 describes the characteristics of the NCBCHAINSEND command.

Table 22-6 *NCBCHAINSEND*

Field	In/Out	Required
ncb_command	In	X
ncb_retcode	Out	
ncb_lsn	In	X
ncb_num		
ncb_buffer	In	X
ncb_length	In	X
ncb_callname	In	X
ncb_name		
ncb_rto		
ncb_sto		
ncb_post	In	
ncb_lana_num	In	X
ncb_cmd_cplt	Out	
ncb_event	In	

22.7 NCBCHAINSENDNA

This command sends the contents of two buffers to the specified receiver and does not wait for any acknowledgment from the receiver. The maximum amount of data that can be sent is 128 KB (a maximum of 64 KB in each buffer). Specify the first buffer and its length in ncb_buffer and ncb_length, respectively. Use bytes 0–1 of ncb_callname to specify the length of the second buffer, and use bytes 2–5 to point to it. Table 22-7 describes the characteristics of the NCBCHAINSENDNA command.

Table 22-7 *NCBCHAINSENDNA*

Field	In/Out	Required

ncb_command	In	X
ncb_retcode	Out	
ncb_lsn	In	X
ncb_num		
ncb_buffer	In	X
ncb_length	In	X
ncb_callname	In	X
ncb_name		
ncb_rto		
ncb_sto		
ncb_post	In	
ncb_lana_num	In	X
ncb_cmd_cplt	Out	
ncb_event	In	

22.8 NCBDELNAME

This command deletes a name from the local name table. If the name to be deleted is associated with active sessions, the error NRC_ACTSES (0x0F) is returned. If any nonactive session commands are outstanding, they receive the error NRC_NAMERR (0x17). Table 22-8 describes the characteristics of the NCBDELNAME command.

Table 22-8 *NCBDELNAME*

Field	In/Out	Required
ncb_command	In	X
ncb_retcode	Out	
ncb_lsn		
ncb_num		
ncb_buffer		
ncb_length		
ncb_callname		
ncb_name	In	X
ncb_rto		
ncb_sto		
ncb_post	In	
ncb_lana_num	In	X
ncb_cmd_cplt	Out	
ncb_event	In	

22.9 NCBDGRECV

This command receives a datagram directed to the local name associated with the ncb_num value. If ncb_num is 0xFF, this command receives datagrams directed to any local name. The local name can be either a group name or a unique name. If no receive datagram command is pending when a datagram is sent, the data is lost. If the supplied buffer is too small, an “incomplete error” message, NRC_INCOMP (0x06), occurs and the data is truncated to fill the buffer. Table 22-9 describes the characteristics of the NCBDGRECV command.

Table 22-9 *NCBDGRECV*

Field	In/Out	Required
ncb_command	In	X
ncb_retcode	Out	
ncb_lsn		
ncb_num	In	X
ncb_buffer	In	X
ncb_length	In/Out	X
ncb_callname	Out	
ncb_name		
ncb_rto		
ncb_sto		
ncb_post	In	
ncb_lana_num	In	X
ncb_cmd_cplt	Out	
ncb_event	In	

22.10 NCBDGRECVBC

This command receives a broadcast datagram from any name issuing a command to send broadcast datagrams. An “incomplete error” message, NRC_INCOMP (0x06), occurs if the supplied buffer is not large enough, and the data is truncated to fill the buffer. Table 22-10 describes the characteristics of the NCBDGRECVBC command.

Table 22-10 *NCBDGRECVBC*

Field	In/Out	Required
ncb_command	In	X
ncb_retcode	Out	
ncb_lsn		
ncb_num	In	X

ncb_buffer	In	X
ncb_length	In/Out	X
ncb_callname	Out	
ncb_name		
ncb_rto		
ncb_sto		
ncb_post	In	
ncb_lana_num	In	X
ncb_cmd_cplt	Out	
ncb_event	In	

22.11 NCBDGSEND

This command sends a datagram to a specified name. The name can be either a unique name or a group name. If an adapter has a pending receive datagram command for the same name, the adapter receives its own message. The maximum datagram size depends on the underlying protocol. To find the maximum datagram size, you can perform a local NCBASTAT command. The ADAPTER_STATUS structure that is returned gives the maximum datagram size for the underlying transport protocol. Table 22-11 describes the characteristics of the NCBDGSEND command.

Table 22-11 *NCBDGSEND*

Field	In/Out	Required
ncb_command	In	X
ncb_retcode	Out	
ncb_lsn		
ncb_num	In	X
ncb_buffer	In	X
ncb_length	In	X
ncb_callname	In	X
ncb_name		
ncb_rto		
ncb_sto		
ncb_post	In	
ncb_lana_num	In	X
ncb_cmd_cplt	Out	
ncb_event	In	

22.12 NCBDGSENDBC

This command sends a broadcast datagram to every host on the LAN. Only those machines with an outstanding receive datagram command get the message. Also, if the local adapter has a pending receive datagram command, it receives its own message. Broadcast datagrams have the same size limitation mentioned in the NCBDGSEND entry. Table 22-12 describes the characteristics of the NCBDGSENDBC command.

Table 22-12 *NCBDGSENDBC*

Field	In/Out	Required
ncb_command	In	X
ncb_retcode	Out	
ncb_lsn		
ncb_num	In	X
ncb_buffer	In	X
ncb_length	In	X
ncb_callname		
ncb_name		
ncb_rto		
ncb_sto		
ncb_post	In	
ncb_lana_num	In	X
ncb_cmd_cplt	Out	
ncb_event	In	

22.13 NCBENUM

This command enumerates LANA numbers. When you issue this command, set ncb_buffer to a LANA_ENUM structure. On return, the length field of LANA_ENUM returns the number of LANA numbers on the local machine. The lana field of LANA_ENUM is filled with the LANA numbers. Table 22-13 describes the characteristics of the NCBENUM command.

Table 22-13 *NCBENUM*

Field	In/Out	Required
ncb_command	In	X
ncb_retcode	Out	
ncb_lsn		
ncb_num		

ncb_buffer	In	X
ncb_length	In	X
ncb_callname		
ncb_name		
ncb_rto		
ncb_sto		
ncb_post		
ncb_lana_num	In	X
ncb_cmd_cplt	Out	
ncb_event		

22.14 NCBFINDNAME

This command finds the location (machine name) of a name on the network. When this command is issued, ncb_buffer is filled with a FIND_NAME_HEADER structure, followed by one or more FIND_NAME_BUFFER structures. This command is Microsoft Windows NT–specific and is not supported on any other Windows platforms. Table 22-14 describes the characteristics of the NCBFINDNAME command.

Table 22-14 *NCBFINDNAME*

Field	In/Out	Required
ncb_command	In	X
ncb_retcode	Out	
ncb_lsn		
ncb_num		
ncb_buffer	In/Out	X
ncb_length	In	X
ncb_callname	In	X
ncb_name		
ncb_rto		
ncb_sto		
ncb_post	In	
ncb_lana_num	In	X
ncb_cmd_cplt	Out	
ncb_event	In	

22.15 NCBHANGUP

This command closes a specified connected session. All pending receive commands for the session are terminated and return the “session closed” error message, NRC_SCLOSED (0x0A). If either send or chain send commands are outstanding, the hang up command delays until the command completes. This delay occurs whether the commands are transferring data or waiting for the remote side to issue a receive command. Additionally, if multiple outstanding NCBRECVANY commands exist, only one of them returns an error code when the session is closed. For any other receive command, each outstanding receive returns an error. Table 22-15 describes the characteristics of the NCBHANGUP command.

Table 22-15 *NCBHANGUP*

Field	In/Out	Required
ncb_command	In	X
ncb_retcode	Out	
ncb_lsn	In	X
ncb_num		
ncb_buffer		
ncb_length		
ncb_callname		
ncb_name		
ncb_rto		
ncb_sto		
ncb_post	In	
ncb_lana_num	In	X
ncb_cmd_cplt	Out	
ncb_event	In	

22.16 NCBLANSTALERT

This is a Windows NT–only command that notifies the user of LAN failures that last for more than one minute. However, in testing, this command did nothing in response to several common LAN failures, such as disconnected network cables. Table 22-16 describes the characteristics of the NCBLANSTALERT command.

Table 22-16 *NCBLANSTALERT*

Field	In/Out	Required
ncb_command	In	X
ncb_retcode	Out	

ncb_lsn		
ncb_num		
ncb_buffer		
ncb_length		
ncb_callname		
ncb_name		
ncb_rto		
ncb_sto		
ncb_post		
ncb_lana_num	In	X
ncb_cmd_cplt	Out	
ncb_event		

22.17 NCBLISTEN

This command listens for a connection from another process, local or remote. If the first character of ncb_callname is an asterisk (*), a session is established with any network adapter that issues an NCBCALL to the local name. The name making the NCBCALL is returned in the ncb_callname field. If either a send or receive timeout is specified, these timeout values are applied to all send and receive calls made on the new session. Table 22-17 describes the characteristics of the NCBLISTEN command.

Table 22-17 *NCBLISTEN*

Field	In/Out	Required
ncb_command	In	X
ncb_retcode	Out	
ncb_lsn	Out	
ncb_num		
ncb_buffer		
ncb_length		
ncb_callname	In/Out	X
ncb_name	In	X
ncb_rto	In	
ncb_sto	In	
ncb_post	In	
ncb_lana_num	In	X
ncb_cmd_cplt	Out	
ncb_event	In	

22.18 NCBRECV

This command receives data from the specified session name. If more than one command capable of receiving data is pending, they are processed in the following order:

1. Receive (NCBRECV)
2. Receive-any for a specified name (NCBRECVANY)
3. Receive-any for any name (NCBRECVANY)

All commands with the same precedence are processed in first-in, first-out (FIFO) order. If the buffer passed is not large enough to hold the data, the error NRC_INCOMP (0x06) is returned. If this occurs, issue another receive command with a larger buffer unless the send command was issued with either a timeout that expired or a no-ack—in which case the data is lost. The ncb_length field is set to the amount of data actually read on return. Table 22-18 describes the characteristics of the NCBRECV command.

Table 22-18 *NCBRECV*

Field	In/Out	Required
ncb_command	In	X
ncb_retcode	Out	
ncb_lsn	In	X
ncb_num	In	X
ncb_buffer	In	X
ncb_length	In/Out	X
ncb_callname		
ncb_name		
ncb_rto		
ncb_sto		
ncb_post	In	
ncb_lana_num	In	X
ncb_cmd_cplt	Out	
ncb_event	In	

22.19 NCBRECVANY

This command receives data from any session corresponding to the specified name. This command can also be used to receive data destined for any local name by setting the ncb_num field to 0xFF. Otherwise, simply set ncb_num to the network number returned from adding a name to the local name table. Then any data pending for that

particular name will be picked up by this command. Also, a precedence order exists for when multiple receive commands are outstanding. See the entry for NCBRECV for more details.

When a session is closed by a local session close command, by the remote side closing the session, or by a session abort command, any outstanding NRCRECVANY commands for the specified name complete with the error NRC_SCLOSED (0x0A); the ncb_lsn field of the NCB structure is set to the local session number that was terminated. If no NCBRECVANY commands for that closed session are pending for the specified name and an outstanding NCBRECVANY command exists for any session (ncb_num is 0xFF), that command completes with the error NRC_SCLOSED and with the ncb_lsn field set to the corresponding session number. Table 22-19 describes the characteristics of the NCBRECVANY command.

Table 22-19 *NCBRECVANY*

Field	In/Out	Required
ncb_command	In	X
ncb_retcode	Out	
ncb_lsn	Out	
ncb_num	In/Out	X
ncb_buffer	In	X
ncb_length	In/Out	X
ncb_callname		
ncb_name		
ncb_rto		
ncb_sto		
ncb_post	In	
ncb_lana_num	In	X
ncb_cmd_cplt	Out	
ncb_event	In	

22.20 NCBRESET

This command resets the specified LANA number and affects certain environment resources as follows:

- If ncb_lsn is not 0, all resources associated with ncb_lana_num are freed.
- If ncb_lsn is 0, all resources associated with ncb_lana_num are freed and new resources are allocated. The ncb_callname[0] byte specifies the maximum number of sessions, the ncb_callname[2] byte specifies the maximum number of names, and the ncb_callname[3] byte requests that the application use the computer's name (which has the name number 1).

Table 22-20 describes the characteristics of the NCBRESET command.

Table 22-20 *NCBRESET*

Field	In/Out	Required
ncb_command	In	X
ncb_retcode	Out	
ncb_lsn	In	X
ncb_num	In	X
ncb_buffer		
ncb_length		
ncb_callname		
ncb_name		
ncb_rto		
ncb_sto		
ncb_post		
ncb_lana_num	In	X
ncb_cmd_cplt	Out	
ncb_event		

22.21 NCBSEND

This command sends data to the specified session partner. The maximum data size that can be transmitted is 65,536 bytes (64 KB). If the remote side issues a hang up command, all pending sends return the “session closed” error, NRC_SCLOSED (0x0A). If more than one send command is pending, they are processed in FIFO order. Table 22-21 describes the characteristics of the NCBSEND command.

Table 22-21 *NCBSEND*

Field	In/Out	Required
ncb_command	In	X
ncb_retcode	Out	
ncb_lsn	In	X
ncb_num		
ncb_buffer	In	X
ncb_length	In	X
ncb_callname		
ncb_name		
ncb_rto		
ncb_sto		
ncb_post	In	

ncb_lana_num	In	X
ncb_cmd_cplt	Out	
ncb_event	In	

22.22 NCBSENDNA

This command sends data to a specified session and does not wait for acknowledgment from the session partner. Otherwise, the behavior of this command is the same as that of NCBSEND. Table 22-22 describes the characteristics of the NCBSENDNA command.

Table 22-22 *NCBSENDNA*

Field	In/Out	Required
ncb_command	In	
ncb_retcode	Out	
ncb_lsn	In	X
ncb_num		
ncb_buffer	In	X
ncb_length	In	X
ncb_callname		
ncb_name		
ncb_rto		
ncb_sto		
ncb_post	In	
ncb_lana_num	In	X
ncb_cmd_cplt	Out	
ncb_event	In	

22.23 NCBSSTAT

This command retrieves the status of a session. When calling this command, ncb_buffer is set to a block of memory that is filled with a SESSION_HEADER structure followed by one or more SESSION_BUFFER structures. If the first byte of ncb_name is an asterisk (*), this command obtains the status for all sessions associated with all names in the local name table. If the supplied buffer is too small, the error NRC_INCOMP (0x06) is returned. If the buffer length is less than 4, the error returned is NRC_BUFLEN (0x01). Table 22-23 describes the characteristics of the NCBSSTAT command.

Table 22-23 *NCBSSTAT*

Field	In/Out	Required
ncb_command	In	X
ncb_retcode	Out	
ncb_lsn		
ncb_num	Out	
ncb_buffer	In	X
ncb_length	In	X
ncb_callname		
ncb_name	In	X
ncb_rto		
ncb_sto		
ncb_post	In	
ncb_lana_num	In	X
ncb_cmd_cplt	Out	
ncb_event	In	

22.24 NCBUNLINK

This command unlinks the adapter and is provided for compatibility with earlier versions of NetBIOS. It has no effect on Windows platforms.