Queue Management Services APIs

Introduction to QMS

Queue Management Services (QMS) allow an application to create queues for controlling the flow of jobs and services on the network. A queue organizes client requests for a job server. A job server is software that resides at a specific workstation and provides services for other workstations on the network. Networks can have many different kinds of job servers, including print servers, archiving servers, compiling servers, message-sending servers and so on. By placing requests into network queues, a job server can provide service that is both flexible and efficient.

Some of the function calls in this chapter would only be called by a queue server. Others might be called by user applications which submit queue jobs and maintain created queues.

NWAbortServicingQueueJob

This function signals the queue management software that a job cannot be completed successfully.

Synopsis

```
#include "nwapi.h"

int                 ccode;
uint16              serverConnID;
uint32              queueID;
uint16              jobNumber;
NWFileHandle_ta     fileHandle;

ccode=NWAbortServicingQueueJob( serverConnID, queueID, jobNumber, fileHandle );
```

Input

serverConnID passes the job server connection ID.

queueID passes the bindery object ID for the queue in which the aborted job is located.

jobNumber passes the job number of the aborted job.

fileHandle passes a pointer to the file handle of the file associated with the aborted job.

Output

None.

Return Value

0	Successful.
-1	Unsuccessful. One of the following error codes is placed in NWErrno

0x99 (153)	Directory Full
0xD0 (208)	Queue Error
0xD1 (209)	No Queue
0xD2 (210)	No Queue Server
0xD3 (211)	No Queue Rights
0xD4 (212)	Queue Full
0xD5 (213)	No Queue Job

0xD6 (214)	No Job Right
0xD7 (215)	Queue Servicing
0xD8 (216)	Queue Not Active
0xD9 (217)	Station Not Server
0xDA (218)	Queue Halted
0xDB (219)	Max. Queue Servers
0xFF (255)	Failure

Note: Because NWCloseFile function is called with NWAbortServicingQueueJob, you may receive an NWErrno = 0x001100xx. The 0x0011 indicates a file system services error. See Appendix B for a complete listing of possible NetWare errors.

Description

This function call allows a job server to inform the queue manager that it cannot complete servicing a job previously accepted for service. This function closes the job file and resets the job server's access rights to their original (login) values.

An aborted job returns to its former position in the job queue if its Service Restart flag (bit 0x10 of the jobControlFlags field in the NWQueueJobStruct_t) is set. For example, if a job is at the beginning of the queue before being called, it returns to the beginning of the queue after being aborted. An aborted job could, therefore, be next in line for service. For this reason, a job should not be aborted because of an error in the job's format or requests. Instead, use the NWFinishServicingQueueJob function.

Notes

A job should be aborted only if some temporary internal problem prevents it from completing. For example, a print job might be aborted if the printer has a paper jam. After the paper jam is corrected, the job server can service the job successfully.

IMPORTANT: If a job is attempting to access data without proper security clearance and is aborted, the job will remain in the queue and be serviced and aborted again and again. To remove a job from the job queue, a user would have to use the NWCloseFileAndAbortQueueJob call, or the queue server would have to use the NWFinishServicingQueueJob call.

Only a queue server that has previously accepted a job for service can make this function call.

See Also

NWChangeQueueJobEntry
NWCreateQueueFile
NWFinishServicingQueueJob
NWReadQueueJobEntry

NWAttachQueueServerToQueue

This function attaches the calling client to the specified queue as a queue server.

Synopsis

```
#include "nwapi.h"

int             ccode;
uint16          serverConnID;
uint32          queueID;

ccode=NWAttachQueueServerToQueue( serverConnID, queueID );
```

Input

serverConnID passes the file server connection ID.

queueID passes the bindery object ID of the queue being attached.

Output

None.

Return Value

0	Successful.
-1	Unsuccessful. One of the following error codes is placed in NWErrno.

0x99 (153)	Directory Full
0xD0 (208)	Queue Error
0xD1 (209)	No Queue
0xD2 (210)	No Queue Server
0xD3 (211)	No Queue Rights
0xD4 (212)	Queue Full
0xD5 (213)	No Queue Job
0xD6 (214)	No Job Right
0xD7 (215)	Queue Servicing
0xD8 (216)	Queue Not Active
0xD9 (217)	Station Not Server
0xDA (218)	Queue Halted
0xDB (219)	Max. Queue Servers
0xFF (255)	Failure

See Appendix B for a complete listing of possible NetWare errors and a description of the four bytes in NWErrno.

Description

This function call is created for queue job servers and must be used before the job server can perform any services in the queue. After the queue server has logged in to the file server as a queue server (bindery object), this call establishes a connection between the queue server and the queue. If the queue server logs out of the file server, this connection to the queue will be detached.

Notes

A client must attach itself to a queue as a job server before it can service jobs from that queue. A queue can have as many as 25 job servers attached. The workstation making this function call must be security equivalent to one of the objects listed in the queue's Q_SERVERS group property.

NWChangeQueueJobEntry

This function changes the information about a job in a queue.

Synopsis

```
#include "nwapi.h";

int                 ccode;
uint16              serverConnID;
uint32              queueID;
NWQueueJobStruct_t  jobStruct;

ccode=NWChangeQueueJobEntry( serverConnID, queueID, &jobStruct );
```

Input

serverConnID passes the file server connection ID.

queueID passes the bindery object ID of the queue.

jobStruct passes a pointer to the job structure that contains the new information about the job. (See Appendix A, ªNWQueueJobStruct_t Structure.º)

Output

None.

Return Value

0	Successful.
-1	Unsuccessful. One of the following error codes is placed in NWErrno.

0x99 (153)	Directory Full
0xD0 (208)	Queue Error
0xD1 (209)	No Queue
0xD2 (210)	No Queue Server
0xD3 (211)	No Queue Rights
0xD4 (212)	Queue Full
0xD5 (213)	No Queue Job
0xD6 (214)	No Job Right
0xD7 (215)	Queue Servicing
0xD8 (216)	Queue Not Active
0xD9 (217)	Station Not Server
0xDA (218)	Queue Halted
0xDB (219)	Max. Queue Servers
0xFF (255)	Failure

See Appendix B for a complete listing of possible NetWare errors and a description of the four bytes in NWErrno.

Description

The following fields in the NWQueueJobStruct_t structure may be changed by the owner of the job or by a queue operator:

targetServerID
targetExecutionTime
jobType
jobControlFlags
jobDescription
queueRecord

If the caller is an operator, the Operator Hold flag can be reset to a value supplied by the caller.

Use NWChangeQueueJobPosition to change the job's service position in the queue.

Notes

The NWChangeQueueJobEntry function can be used in conjunction with the NWReadQueueJobEntry function to change a portion of the job's entry record. However, if the target entry is already being serviced, the NWChangeQueueJobEntry function returns a servicing error and makes no changes to the job's entry record.

If this call is being used in conjunction with printing and the NWPrintStruct_t, the structure must first be converted

(using the
NWConvertPrintStructToQueueStruct) before this call is made.

See Also

NWChangeQueueJobEntry
NWChangeQueueJobPosition
NWConvertPrintStructToQueueStruct
NWGetQueueJobList
NWReadQueueJobEntry
NWRemoveJobFromQueue

NWChangeQueueJobPosition

This function changes a job's position in a queue.

Synopsis

```
#include "nwapi.h"

int             ccode;
uint16          serverConnID;
uint32          queueID;
uint16          jobNumber;
uint8           newJobPosition;

ccode=NWChangeQueueJobPosition( serverConnID, queueID, jobNumber,   newJobPosition );
```

Input

serverConnID passes the file server connection ID.

queueID passes the bindery object ID of the affected queue.

jobNumber passes the job number of the job being repositioned.

newJobPosition passes the job's new position.

Output

None.

Return Value

0	Successful.
-1	Unsuccessful. One of the following error codes is placed in NWErrno.

0x99 (153)	Directory Full
0xD0 (208)	Queue Error
0xD1 (209)	No Queue
0xD2 (210)	No Queue Server
0xD3 (211)	No Queue Rights
0xD4 (212)	Queue Full
0xD5 (213)	No Queue Job
0xD6 (214)	No Job Right
0xD7 (215)	Queue Servicing
0xD8 (216)	Queue Not Active
0xD9 (217)	Station Not Server
0xDA (218)	Queue Halted

0xDB (219)	Max. Queue Servers
0xFF (255)	Failure

See Appendix B for a complete listing of possible NetWare errors and a description of the four bytes in NWErrno.

Description

The value of the newJobPosition parameter ranges from 1 to 250. Position 1 is the first position in the queue and position 250 is the last position in a full queue. If a specified position number places the job beyond the current end of the queue, the job is placed at the end of the current queue.

Notes

When a job is moved in the queue, the positions of all job entries are updated to reflect the change. Changing the position of a job being serviced has no effect on the service of that job. Be aware that job positions change as other jobs in the queue are finished being serviced.

The application making this call must be logged in as supervisor.

See Also

NWChangeQueueJobEntry
NWGetQueueJobList
NWReadQueueJobEntry
NWRemoveJobFromQueue

NWChangeToClientRights

This function changes a queue server's current login identity to match the identity of the client for whom the queue server is acting.

Synopsis

```
#include "nwapi.h"

int       ccode;
uint16    serverConnID;
uint32    queueID;
uint16    jobNumber;

ccode=NWChangeToClientRights( serverConnID, queueID, jobNumber );
```

Input

serverConnID passes the queue server connection ID.

queueID passes the bindery object ID of the queue.

jobNumber passes the job's job number.

Output

None.

Return Value

0	Successful.
-1	Unsuccessful. One of the following error codes is placed in NWErrno.

0x99 (153)	Directory Full

0xD0 (208)	Queue Error
0xD1 (209)	No Queue
0xD2 (210)	No Queue Server
0xD3 (211)	No Queue Rights
0xD4 (212)	Queue Full
0xD5 (213)	No Queue Job
0xD6 (214)	No Job Right
0xD7 (215)	Queue Servicing
0xD8 (216)	Queue Not Active
0xD9 (217)	Station Not Server
0xDA (218)	Queue Halted
0xDB (219)	Max. Queue Servers
0xFF (255)	Failure

See Appendix B for a complete listing of possible NetWare errors and a description of the four bytes in NWErrno.

Description

This function allows a queue server to change its current login identity to match the identity of the client for which it is acting. This is useful if the queue server must access files owned by the client but not submitted to the queue by the client (in other words, if the server must go out and retrieve files by itself). The queue server's login user ID and associated security equivalence list are replaced by the ID and security equivalence list of the user who placed the job in the queue.

This function does not change any path mappings that the queue server may have on the job server. However, all access rights to those directories are recalculated to conform to the rights of the queue client. Files opened before this call is made will continue to be accessible with the server's rights. Files opened after this call is made will be accessible only with the client's rights.

Notes

The job server is responsible for creating any path mappings that it may need to carry out the client's requests after this call has been made.

The NWRestoreQueueServerRights function reverses the effects of the NWChangeToClientRights function. In addition, the server's rights are automatically reset if the server issues a NWFinishServicingQueueJob or NWAbortServicingQueueJob function.

Only a queue server that has previously accepted a job for service can call this function.

See Also

NWAbortServicingQueueJob
NWFinishServicingQueueJob
NWRestoreQueueServerRights

NWCloseFileAndAbortQueueJob

This function signals the QMS that a job has not been created properly and should be removed from the queue.

Synopsis

```
#include "nwapi.h"

int             ccode;
uint16          serverConnID;
uint32          queueID;
uint16          jobNumber;
```

```
NWFileHandle_ta          fileHandle;

ccode=NWCloseFileAndAbortQueueJob( serverConnID, queueID,
jobNumber,   fileHandle );
```

Input

serverConnID passes the queue server connection ID.

queueID passes the bindery object ID of the affected queue.

jobNumber passes the job entry number of the job whose service is being aborted.

fileHandle passes a pointer to the file handle of the aborted job's file (returned from the NWCreateQueueFile function call).

Output

None.

Return Values

0	Successful.
-1	Unsuccessful. One of the following error codes is placed in NWErrno.

0xD1	No Queue
0xD3	No Queue Rights
0xD4	Queue Full
0xD5	No Queue Job
0xF5	No Such Object
0xD6	No Job Right
0xD7	Queue Servicing
0xD8	Queue Not Active
0xFF	Invalid File Handle
0x30	Invalid Connection ID

Note: Because this API uses NWCloseFile, it is possible to get an NWErrno = 0x001100xx. The 0x0011 signifies a file system error. See Appendix B for a complete listing of possible NetWare errors and a description of the four bytes in NWErrno.

Description

This function allows the client to close a queue job and abort it. The jobNumber parameter contains the job number returned by QMS when the job was originally entered in the queue. The file associated with that job number is closed, and the job is deleted from the queue.

Notes

Only the client that created the queue job can call this function.

See Also

NWCloseFileAndStartQueueJob
NWCreateQueueFile
NWRemoveJobFromQueue

NWCloseFileAndStartQueueJob

This function closes a queue file and marks it ready for execution.

Synopsis

```
#include "nwapi.h"

int                 ccode;
uint16              serverConnID;
uint32              queueID;
uint16              jobNumber;
NWFileHandle_ta     fileHandle;

ccode=NWCloseFileAndStartQueueJob( serverConnID, queueID,
jobNumber,   fileHandle );
```

Input

serverConnID passes the queue server connection ID.

queueID passes the bindery object ID of the queue in which the specified job was placed.

jobNumber passes the job number of the job to be serviced.

fileHandle passes a pointer to the file handle of the file associated with the job to be executed (returned from the NWCreateQueueFile function call).

Output

None.

Return Values

0	Successful.
-1	Unsuccessful. One of the following error codes is placed in NWErrno.

0xD1	No Queue
0xD3	No Queue Rights
0xD5	No Queue Job
0xF5	No Such Object
0xD7	Queue Servicing
0xD8	Queue Not Active
0xFF	Invalid File Handle
0x30	Invalid Connection ID

Note: Because this API uses NWCloseFile, it is possible to get an NWErrno = 0x001100xx. The 0x0011 signifies a file system error. See Appendix B for a complete listing of possible NetWare errors and a description of the four bytes in NWErrno.

Description

This function allows the workstation to close a queue job file and mark the job for execution.

The jobNumber parameter contains the job number returned by QMS when the job was originally entered in the queue.

When this function finishes, the specified job is ready for execution, if the userHoldFlag and operatorHoldFlag fields are both cleared and the

targetExecutionTime was either not specified or has elapsed (set with the jobStruct parameter when the file was created).

Notes

Only the client that created the job can call this function.

See Also

NWCloseFileAndAbortQueueJob
NWCreateQueueFile
NWRemoveJobFromQueue

NWConvertPrintStructToQueueStruct

This function converts the printRecord to a form acceptable to NetWare print servers.

Synopsis

#include ªnwapi.hº;

```
int                 ccode;
NWPrintRecord_t     printRecord;
NWClientRecord_ta   queueRecord;

ccode=NWConvertPrintStructToQueueStruct( &printRecord, queueRecord );
```

Input

printRecord passes the address of the filled in printRecord structure. (See Appendix A, ªNWPrintRecord_t Structure.º)

queueRecord passes a pointer to where all of the print information will be stored. (See Appendix A, the queueRecord field in ªNWQueueJobStruct_t Structure.º)

Output

queueRecord receives the print record information. (See Appendix A, the queueRecord field in ªNWQueueJobStruct_t Structure.º)

Description

Before this function can be called, all the fields in the NWPrintRecord_t structure must be assigned values. The following sample code assumes that a NWPrintRecord_t structure called prtR1 has been declared. (To automatically set all fields to 0, use menset or declare a static structure.)

versionNumber — Assigns the version number.

```
prtR1.versionNumber = 1;
```

tabSize — Assigns the number of spaces tabs will be expanded to (0 -18). The following sample code expands the tab to 8 spaces:

```
prtR1.tabSize = 8;
```

numCopies	Assigns the number of copies that will be printed. The following sample code assigns 2 copies: **prtR1.numCopies = 2;**
controlFlags	Sets one or more control flags. Use one or more of the following: NWPCF_SUPPRESS_FF NWPCF_NOTIFY_USER NWPCF_TEXT_MODE NWPCF_PRINT_BANNER The following sample code suppresses the form feed: **prtR1.controlFlags =** NWPCF_SUPPRESS_FF;
linesPerPage	Assigns the number of lines on one page. The following sample code assigns 66 lines per page: **prtR1.linesPerPage = 66;**
charsPerLine	Assigns the number of characters on one line. The following code assigns 132 characters per line: prtR1.charsPerLine = 132;
formName	Sets the form to use for printing the job. The following sample code sets this field to 0: prtR1.formName[0] = 0;
bannerNameField	Assigns the text that is printed in the first box in the banner. Usually the user's name is printed in this box. The following sample code sets this field to a user named Nikki: strcpy(prtR1.bannerNameField, "Nikki");
bannerFileField	Assigns the text that is printed in the second box in the banner. Usually the file name is printed in this box. The following sample code sets this field to a file name of API.DOC: strcpy(prtR1.bannerFileField, "API.DOC");
headerFileName	Assigns the file name that is printed in the header of the banner. The following sample code sets this field to 0: prtR1.headerFileName[0] = 0;
directoryPath	Assigns the full path name of the directory where the

file resides. The following sample code assigns the file API.DOC in the SYS:DOC/API directory:

strcpy(prtR1.directoryPath,
"SYS:DOC/API/ API.DOC");

This function performs any necessary byte swapping and word alignment and then copies the printRecord into the queueRecord field in the NWQueueJobStruct_t structure. This call is usually used before calling NWCreateQueueFile.

The queueRecord field contains information pertaining to the print job. This information is assigned by the client and is sometimes referred to as the "client record area."

See Also

NWCreateQueueFile
NWConvertQueueStructToPrintStruct

NWConvertQueueStructToPrintStruct

This function converts the queueRecord (in the NWQueueJobStruct_t) to a printRecord which is in the form originally passed in by the client.

Synopsis

#include ªnwapi.hº;

```
int                 ccode;
NWClientRecord_ta   queueRecord;
NWPrintRecord_t     printRecord;

ccode=NWConvertQueueStructToPrintStruct( queueRecord,  &printRecord );
```

Input

queueRecord passes the address of the print information. (See Appendix A, the queueRecord field in ªNWQueueJobStruct_t Structure.º)

printRecord passes a pointer to the allocated NWPrintRecord_t structure. (See Appendix A, ªNWPrintRecord_t Structure.º)

Output

printRecord fills in the converted queueRecord. (See Appendix A, ªNWPrintRecord_t Structure.º)

Description

This function performs any necessary byte swapping and word alignment and then copies the data back into the printRecord space. This call is necessary for the user to be able to read the fields in the print structure. This function is most often used after NWReadQueueJobEntry.

The queueRecord field in the NWQueueJobStruct_t structure is an area which is filled in by the client; it is sometimes referred to as ªclient record area.º

See Also

NWReadQueueJobEntry
NWConvertPrintStructToQueueStruct

NWCreateQueue

This function creates a new queue in the bindery and file system of the specified file server.

Synopsis

```
#include "nwapi.h"

int             ccode;
uint16          serverConnID;
char            queueName[NWMAX_QUEUE_NAME_LENGTH];
uint16          queueObjectType;
NWDirHandle_ts  directoryHandle;
char            queueSubdirectory[NWMAX_QUEUE
                                  SUBDIR_LENGTH];
uint32          newQueueID;

ccode=NWCreateQueue( serverConnID, queueName, queueObjectType,
directoryHandle, queueSubdirectory, &newQueueID );
```

Input

serverConnID passes the file server connection ID.

queueName passes a pointer to the name of queue to be created (48 characters).

queueObjectType passes a number indicating the bindery object type for the new queue.

directoryHandle passes the NetWare directory handle pointing to the directory in which the queue's property is to be created (0 if the queueSubdirectory parameter contains the full path).

queueSubdirectory passes a pointer to the absolute path or a path relative to the NetWare directory handle that will contain the queue files (119 characters, stored in the Q_DIRECTORY property).

newQueueID passes a pointer to the space allocated for the new queue ID number.

Output

newQueueID receives the new queue ID number.

Return Values

0	Successful.
-1	Unsuccessful. One of the following error codes is placed in NWErrno.

0x99	Directory Full
0xFF	Failure
0xF5	No Object Create Privilege
0x30	Invalid Connection ID
0x9B	Invalid Dir Handle
0x98	Volume Does Not Exist
0xEE	Queue Exists

See Appendix B for a complete listing of possible NetWare errors and a description of the four bytes in NWErrno.

Description

This function creates a queue in the bindery, using the type and name specified by the queueObjectType and

queueName parameters. Novell has the following bindery object types defined for queues:

NWOT_PRINT_QUEUE
NWOT_ARCHIVE_QUEUE
NWOT_JOB_QUEUE

This function also creates the Q_DIRECTORY property. The value for the Q_DIRECTORY property is determined by combining the directoryHandle and queueSubdirectory parameters.

QMS will use the directory handle and directory path parameters to create a queue directory that holds the system files containing the queue itself and the job files related to the queue entries. The directory path SYS:SYSTEM is commonly used for the queue directory. QMS uses this directory to store queue files until they are serviced.

Next, this function creates the following group properties:

- Q_SERVERS
- Q_OPERATORS
- Q_USERS

Notes

Only SUPERVISOR or a bindery object that is security equivalent to SUPERVISOR can create a queue.

See Also

NWDestroyQueue

NWCreateQueueFile

This function creates a queue file.

Synopsis

```
#include "nwapi.h"

int                 ccode;
uint16              serverConnID;
uint32              queueID;
NWQueueJobStruct_t  jobStruct;
NWFileHandle_ta     fileHandle;

ccode=NWCreateQueueFile( serverConnID, queueID, &jobStruct, fileHandle );
```

Input

serverConnID passes the file server connection ID.

queueID passes the bindery's object ID for the queue.

jobStruct passes a pointer to the structure in which the information about the job is stored. (See Appendix A, ªNWQueueJobStruct _t Structure.º)

fileHandle passes a pointer to the file handle of the file to be created in the queue.

Output

jobStruct receives the completed job structure. (See Appendix A, ªNWQueueJobStruct_t Structure.º)

fileHandle receives the file handle of the job's associated file. (This file contains data pertaining to the job; for example, a print job file would contain the actual data to be printed.)

Return Values

0	Successful.
-1	Unsuccessful. One of the following error codes is placed in NWErrno.

0x99	Directory Full
0xD7	Queue Servicing
0xD0	Queue Error
0xD8	Queue Not Active
0xD1	No Queue
0xDA	Queue Halted
0xD3	No Queue Rights
0xFC	No Such Object
0xD4	Queue Full
0xFF	Failure
0x30	Invalid Connection ID

See Appendix B for a complete listing of possible NetWare errors and a description of the four bytes in NWErrno.

Description

This function allows a client to enter a new job in a queue.

The following fields within the NWQueueJobStruct_t structure must be assigned values before this call can be made. (See Appendix A, ªNWQueueJobStruct_t Structure.º)

targetServerID

The objectID of the queue server or 0xFFFFFFFF for any server. The following example assigns 0xB0000012 as the targetServerID:

```
jobStruct.targetServerID = 0xB0000012;
```

targetExecutionTime

The time you want the file processed. The field is a 6 byte field with the following format: year, month, day, hour, minute, second. Use 0xFFFFFFFFFFFF for first opportunity. This example assigns May 1, 1991, 9:30:10 am as the targetExecutionTime:

```
jobStruct.targetExecutionTime[0] = 91;
jobStruct.targetExecutionTime[1] = 5;
jobStruct.targetExecutionTime[2] = 1;
jobStruct.targetExecutionTime[3] = 9;
jobStruct.targetExecutionTime[4] = 30;
jobStruct.targetExecutionTime[5] = 10;
```

jobType

The number representing the type of job serviced by the server; this number is server dependent. The following example assigns 0x00 as the jobType (0x00 means the queue server does not use this field):

```
jobStruct.jobType = 0;
```

jobControlFlags

The control flag that has been assigned to the job. Use any of the following:

```
NWCF_OPERATOR_HOLD
```

NWCF_USER_HOLD
NWCF_ENTRY_OPEN
NWCF_SERVICE_RESTART
NWCF_SERVICE_AUTO_START

The following example assigns NWCF_SERVICE_ RESTART:

jobStruct.jobControlFlags =
NWCF_SERVICE_RESTART;

jobDescription — A string containing the content or purpose of the job. The following example assigns "Print Job" as the job description:

strcpy(jobStruct.jobDescription,
"Print Job");

The queueRecord field may need to be filled in.

- If the file being submitted to the queue is a NetWare print job, the client must first allocate a printRecord and fill in the NWPrintRecord_t Structure.
- Use NWConvertPrintStructToQueueStruct to fill in the queueRecord with the printRecord information. Then NWCreateQueueFile can be called.
- If the client wants to verify the printRecord after making this call, use NWConvertQueueStructToPrintStruct to convert the queueRecord field back into the printRecord.
- If the file being submitted to the queue is not a NetWare print job and the queue server uses the queueRecord parameter, the queue server must provide its own function to fill in the queueRecord parameter.
- If the queue server does not use the queueRecord parameter, the parameter does not need to be filled in.
- The file server fills in all other fields within the jobStruct parameter and returns it to the requesting client.
- The job will not be serviced until the file is closed with NWCloseFileAndStartQueueJob.

Notes

This function can be used in conjunction with the NWReadQueueJobEntry function to change a portion of the job's entry record. However, if the target entry is already being serviced, NWChangeQueueJobEntry returns a Q_SERVICING error and makes no changes to the job's entry record.

See Also

NWChangeQueueJobEntry
NWCloseFileAndAbortQueueJob
NWCloseFileAndStartQueueJob
NWConvertPrintStructToQueueStruct
NWConvertQueueStructToPrintStruct
NWRemoveJobFromQueue

NWDestroyQueue

This function deletes a queue.

Synopsis

```
#include "nwapi.h"

int                     ccode;
uint16                  serverConnID;
uint32                  queueID;

ccode=NWDestroyQueue( serverConnID, queueID );
```

Input

serverConnID passes the file server connection ID.

queueID passes the bindery object ID of the queue to be deleted.

Output

None.

Return Values

0 Successful.

-1 Unsuccessful. One of the following error codes is placed in NWErrno.

0xFC	No Such Object
0xF4	No Object Delete Privilege
0x30	Invalid Connection ID
0xFF	Failure

See Appendix B for a complete listing of possible NetWare errors and a description of the four bytes in NWErrno.

Description

This function destroys the queue specified by the queueID parameter. All active jobs are aborted, all servers are detached from the queue, and all jobs in the queue are destroyed and their associated files deleted. The queue object and its associated properties are removed from the bindery and the queue's subdirectory is deleted.

Notes

Only SUPERVISOR or a bindery object that is security equivalent to SUPERVISOR can destroy a queue.

See Also

NWCreateQueue

NWDetachQueueServerFromQueue

This function removes the calling client from the queue's list of active queue servers.

Synopsis

```
#include "nwapi.h"

int                     ccode;
```

```
uint16          serverConnID;
uint32          queueID;
```

ccode=**NWDetachQueueServerFromQueue**(serverConnID, queueID);

Input

serverConnID passes the file server connection ID.

queueID passes the bindery object ID of the queue from which the calling station is being detached.

Output

None.

Return Values

0	Successful.
-1	Unsuccessful. One of the following error codes is placed in NWErrno:

0x99 (153)	Directory Full
0xD0 (208)	Queue Error
0xD1 (209)	No Queue
0xD2 (210)	No Queue Server
0xD3 (211)	No Queue Rights
0xD4 (212)	Queue Full
0xD5 (213)	No Queue Job
0xD6 (214)	No Job Right
0xD7 (215)	Queue Servicing
0xD8 (216)	Queue Not Active
0xD9 (217)	Station Not Server
0xDA (218)	Queue Halted
0xDB (219)	Max. Queue Servers
0xFF (255)	Failure

See Appendix B for a complete listing of possible NetWare errors and a description of the four bytes in NWErrno.

Description

This function removes the requesting client from the queue's list of active queue servers. If the requesting client is servicing a job, that service is automatically aborted.

Notes

Only a workstation previously attached to the queue as a queue server can call this function.

See Also

NWAttachQueueServerToQueue
NWReadQueueServerCurrentStatus
NWSetQueueServerCurrentStatus

NWFinishServicingQueueJob

This function signals that a job has been completed successfully.

Synopsis

```
#include "nwapi.h"
```

```
int                 ccode;
uint16              serverConnID;
uint32              queueID;
uint16              jobNumber;
NWFileHandle_ta     fileHandle;

ccode=NWFinishServicingQueueJob( serverConnID, queueID, jobNumber,
fileHandle );
```

Input

serverConnID passes the file server connection ID.

queueID passes the bindery object ID of the queue containing the job being finished.

jobNumber passes the job number of the job being finished.

fileHandle passes a pointer to the file handle for the file associated with the queue job.

Output

None.

Return Values

0	Successful.
-1	Unsuccessful. One of the following error codes is placed in NWErrno:

0x99 (153)	Directory Full
0xD0 (208)	Queue Error
0xD1 (209)	No Queue
0xD2 (210)	No Queue Server
0xD3 (211)	No Queue Rights
0xD4 (212)	Queue Full
0xD5 (213)	No Queue Job
0xD6 (214)	No Job Right
0xD7 (215)	Queue Servicing
0xD8 (216)	Queue Not Active
0xD9 (217)	Station Not Server
0xDA (218)	Queue Halted
0xDB (219)	Max. Queue Servers
0xFF (255)	Failure

Note: Because this call uses NWCloseFile, it is possible to get NWErrno=0x001100xx. The 0x0011 indicates a file system error. See Appendix B for a complete listing of possible NetWare errors and a description of the four bytes in NWErrno.

Description

This function allows a queue server to signal the QMS that it has serviced a job successfully. The job entry is destroyed, and the job file is closed and deleted.

The calling queue server's access rights to the queue server are restored to their original (login) values.

Notes

Only a queue server that has accepted a job to service can call this function.

See Also

NWAbortServicingQueueJob
NWChangeToClientRights
NWServiceQueueJob

NWGetQueueJobFileSize

This function returns the file size of the specified queue job.

Synopsis

```
#include "nwapi.h"

int             ccode;
uint16          serverConnID;
uint32          queueID;
uint16          jobNumber;
uint32          fileSize;

ccode=NWGetQueueJobFileSize( serverConnID, queueID, jobNumber,
&fileSize );
```

Input

serverConnID passes the file server connection ID.

queueID passes the bindery object ID of the queue to which the job is associated.

jobNumber passes the number of the job for which the information will be obtained.

fileSize passes a pointer to the space allocated for the file size.

Output

fileSize receives the file size.

Return Values

0	Successful.
-1	Unsuccessful. One of the following error codes is placed in NWErrno:

0x99 (153)	Directory Full
0xD0 (208)	Queue Error
0xD1 (209)	No Queue
0xD2 (210)	No Queue Server
0xD3 (211)	No Queue Rights
0xD4 (212)	Queue Full
0xD5 (213)	No Queue Job
0xD6 (214)	No Job Right
0xD7 (215)	Queue Servicing
0xD8 (216)	Queue Not Active
0xD9 (217)	Station Not Server
0xDA (218)	Queue Halted
0xDB (219)	Max. Queue Servers
0xFF (255)	Failure

See Appendix B for a complete listing of possible NetWare errors and a description of the four bytes in NWErrno.

NWGetQueueJobList

This function returns a list of all jobs associated with a given queue.

Synopsis

```
#include "nwapi.h"

int                 ccode;
uint16              serverConnID;
uint32              queueID;
uint16              numberOfJobsInQueue;
uint16              listOfJobNumbers[NWMAX_NUMBER_OF_
                                     JOB_NUMBERS];

ccode=NWGetQueueJobList( serverConnID, queueID,
&numberOfJobsInQueue, listOfJobNumbers );
```

Input

serverConnID passes the file server connection ID.

queueID passes the bindery object ID of the queue whose job list is being reported.

numberOfJobsInQueue passes a pointer to the space allocated for the number of jobs in the queue.

listOfJobNumbers passes a pointer to the array allocated for the job numbers.

Output

numberOfJobsInQueue receives the number of jobs currently in the Queue (0 - 250).

listOfJobNumbers receives the job numbers of all the jobs in the queue (0 - 250 numbers possible).

Return Values

0	Successful.
-1	Unsuccessful. One of the following error codes is placed in NWErrno:

0x99 (153)	Directory Full
0xD0 (208)	Queue Error
0xD1 (209)	No Queue
0xD2 (210)	No Queue Server
0xD3 (211)	No Queue Rights
0xD4 (212)	Queue Full
0xD5 (213)	No Queue Job
0xD6 (214)	No Job Right
0xD7 (215)	Queue Servicing
0xD8 (216)	Queue Not Active
0xD9 (217)	Station Not Server
0xDA (218)	Queue Halted
0xDB (219)	Max. Queue Servers
0xFF (255)	Failure

See Appendix B for a complete listing of possible NetWare errors and a description of the four bytes in NWErrno.

Description

This function allows a program to get a list of all the jobs currently in a queue. When used in conjunction with the NWReadQueueJobEntry function, this function allows an application to retrieve information about all the jobs in a given queue. Because the QMS environment is multithreaded, however, the positioning, number and type of jobs in the queue can change between consecutive calls.

This function allows a workstation to determine how many jobs are in the queue at a particular instant and the job number of each. If a subsequent call to read information about a job in the queue fails with a NO_Q_JOB error, the requesting workstation can assume that either the job was deleted from the queue or its service was completed.

Notes

The workstation making this call must be security equivalent to one of the objects listed in the queue's Q_USERS or Q_OPERATORS group properties.

See Also

NWChangeQueueJobEntry
NWChangeQueueJobPosition
NWReadQueueJobEntry

NWReadQueueCurrentStatus

This function returns the current status of a queue.

Synopsis

```
#include "nwapi.h"

int             ccode;
uint16          serverConnID;
uint32          queueID;
uint8           queueStatus;
uint16          numberOfJobsInQueue;
uint16          numberOfServers;
uint32          serverObjectIDList[NWMAX_NUMBER_
                                   OF_SERVER_OBJECT_IDS];
uint16          clientConnIDList[NWMAX_NUMBER_
                                   OF_SERVER_CONN_NUMBERS];

ccode=NWReadQueueCurrentStatus( serverConnID, queueID,
&queueStatus,&numberOfJobsInQueue, &numberOfServers,
serverObjectIDList, clientConnIDList );
```

Input

serverConnID passes the file server connection ID.

queueID passes the bindery object ID of the queue for which the status is being obtained.

queueStatus passes a pointer to the space allocated for the queue status.

numberOfJobsInQueue passes a pointer to the space allocated for the number of jobs in the queue.

numberOfServers passes a pointer to the space allocated for the number of attached queue servers.

serverObjectIDList passes a pointer to an array allocated for queue server object IDs associated with the numberOfServers parameter.

clientConnIDList passes a pointer to an array allocated for clientConnIDs corresponding to the servers returned by

the serverObjectIDList parameter.

Output

queueStatus receives the status of the specified queue. (See Appendix A, ªQueue Status Flags.º)

numberOfJobsInQueue receives the number of jobs currently in the queue.

numberOfServers receives the number of attached queue servers.

serverObjectIDList receives an array of server IDs associated with the numberOfServers parameter.

clientConnIDList receives an array of clientConnIDs corresponding to the servers returned by the serverObjectIDList parameter.

Return Values

0	Successful.
-1	Unsuccessful. One of the following error codes is placed in NWErrno:

0xFC	No Such Object
0x30	Invalid Connection ID
0xFF	Failure

See Appendix B for a complete listing of possible NetWare errors and a description of the four bytes in NWErrno.

Description

This function is a queue server function which reads the current status of the specified queue. The queueStatus parameter indicates the overall status of the queue. (See Appendix A, ªQueue Status Flags.º)

The numberOfJobsInQueue parameter contains a count of the number of jobs currently in the queue, 0 to 250.

The numberOfServers parameter contains a count of the number of queue servers currently attached to service this queue, 0 to 25.

The serverObjectIDList and clientConnIDList parameters list queue servers currently servicing the queue by the queue server's objectID and the queue server's current workstation attachment (clientConnID).

Notes

Workstations making this call must be security equivalent to one of the objects listed in the queue's Q_USERS or Q_OPERATORS group properties.

See Also

NWAttachQueueServerToQueue
NWDetachQueueServerFromQueue
NWReadQueueServerCurrentStatus
NWSetQueueCurrentStatus
NWSetQueueServerCurrentStatus

NWReadQueueJobEntry

This function retrieves information about a specified queue job.

Synopsis

```
#include "nwapi.h"

int                     ccode;
uint16                  serverConnID;
uint32                  queueID;
uint16 j                obNumber;
NWQueueJobStruct_t      jobStruct;

ccode=NWReadQueueJobEntry( serverConnID, queueID, jobNumber,
&jobStruct );
```

Input

serverConnID passes the file server connection ID.

queueID passes the bindery object ID of the queue associated with the queue job being read.

jobNumber passes the number of the job being read.

jobStruct passes a pointer to the structure (NWQueueJobStruct_t) allocated for queue job information.

Output

jobStruct receives the structure containing the queue job information. (See Appendix A, ªNWQueueJobStruct_t Structure.º)

Return Values

0	Successful.
-1	Unsuccessful. One of the following error codes is placed in NWErrno:

0xD0	Queue Error
0xFC	No Such Object
0xD1	No Queue
0x30	Invalid Connection ID
0xD3	No Queue Rights
0xFF	Failure
0xD5	No Queue Job

See Appendix B for a complete listing of possible NetWare errors and a description of the four bytes in NWErrno.

Description

This function allows an application to retrieve information about a job from a queue. The job's full 256-byte record is returned. (See ªNWQueueJobStruct_t structureº in Appendix A.)

Notes

Workstations making this call must be security equivalent to one of the objects listed in the queue's Q_USER or Q_OPERATORS group properties.

See Also

NWChangeQueueJobEntry
NWChangeQueueJobPosition
NWCreateQueueFile
NWGetQueueJobList

NWReadQueueServerCurrentStatus

This function reads the current status of a queue server.

Synopsis

```
#include "nwapi.h"

int         ccode;
uint16      serverConnID;
uint32      queueID;
uint32      queueServerID;
uint16      queueServerClientConnID;
void        serverStatusRecord[NWMAX_SERVER_STATUS_
                               RECORD_LENGTH];

ccode=NWReadQueueServerCurrentStatus( serverConnID, queueID,   queueServerID,
queueServerClientConnID, serverStatusRecord );
```

Input

serverConnID passes the file server connection ID.

queueID passes the bindery object ID of the queue being affected.

queueServerID passes the bindery object ID of the queue server whose current status is being read.

queueServerClientConnID passes the connection number of the queue server being read.

serverStatusRecord passes a pointer to the buffer allocated for the status of the specified queue server.

Output

serverStatusRecord receives the status of the specified queue server (64 bytes).

Return Values

0	Successful.
-1	Unsuccessful. One of the following error codes is placed in NWErrno:

0x99 (153)	Directory Full
0xD0 (208)	Queue Error
0xD1 (209)	No Queue
0xD2 (210)	No Queue Server
0xD3 (211)	No Queue Rights
0xD4 (212)	Queue Full
0xD5 (213)	No Queue Job
0xD6 (214)	No Job Right
0xD7 (215)	Queue Servicing
0xD8 (216)	Queue Not Active
0xD9 (217)	Station Not Server
0xDA (218)	Queue Halted
0xDB (219)	Max. Queue Servers
0xFF (255)	Failure

See Appendix B for a complete listing of possible NetWare errors and a description of the four bytes in NWErrno.

Description

This function allows a station to read the current status of a queue server. The QMS maintains a 64-byte status record for each queue server attached to a queue.

The QMS does not interpret the contents of the status record. The record contains information important to the calling application. We recommend that the first 4 bytes of this record contain an estimated price for the given server to complete a "standard" job.

Notes

Workstations making this call must be security equivalent to one of the objects listed in the queue's Q_USER or Q_OPERATORS group properties.

See Also

NWSetQueueServerCurrentStatus

NWRemoveJobFromQueue

This function removes a job from a queue.

Synopsis

```
#include "nwapi.h"

int         ccode;
uint16      serverConnID;
uint32      queueID;
uint16      jobNumber;

ccode=NWRemoveJobFromQueue( serverConnID, queueID, jobNumber );
```

Input

serverConnID passes the file server connection ID.

queueID passes the bindery object ID of the queue where the job to be removed is located.

jobNumber passes the number of the job being removed.

Output

None.

Return Values

0	Successful.
-1	Unsuccessful. One of the following error codes is placed in NWErrno:

0x99 (153)	Directory Full
0xD0 (208)	Queue Error
0xD1 (209)	No Queue
0xD2 (210)	No Queue Server
0xD3 (211)	No Queue Rights
0xD4 (212)	Queue Full
0xD5 (213)	No Queue Job
0xD6 (214)	No Job Right
0xD7 (215)	Queue Servicing
0xD8 (216)	Queue Not Active
0xD9 (217)	Station Not Server
0xDA (218)	Queue Halted
0xDB (219)	Max. Queue Servers

0xFF (255)	Failure

See Appendix B for a complete listing of possible NetWare errors and a description of the four bytes in NWErrno.

Description

This function allows the workstation to remove a job from a queue. The jobNumber parameter contains the job number returned by the QMS when the job was created. The job number can also be obtained by using the NWGetQueueJobList function.

The specified job is removed from the queue, and the job file is closed and deleted. If the job is being serviced, the service is aborted. Further I/O requests made to the job's queue file return an ILLEGAL_FILE_HANDLE error.

Notes

Both the job's creator and an operator can call this function.

See Also

NWChangeQueueJobEntry
NWChangeQueueJobPosition
NWCreateQueueFile
NWGetQueueJobList
NWReadQueueJobEntry

NWRestoreQueueServerRights

This function restores a server's own identity after it has assumed its client's rights.

Synopsis

```
#include "nwapi.h"

int             ccode;
uint16          serverConnID;

ccode=NWRestoreQueueServerRights( serverConnID );
```

Input

serverConnID passes the file server's connection ID.

Output

None.

Return Values

0	Successful.
-1	Unsuccessful. One of the following error codes is placed in NWErrno:

0x99 (153)	Directory Full
0xD0 (208)	Queue Error
0xD1 (209)	No Queue
0xD2 (210)	No Queue Server
0xD3 (211)	No Queue Rights
0xD4 (212)	Queue Full
0xD5 (213)	No Queue Job
0xD6 (214)	No Job Right

0xD7 (215)	Queue Servicing
0xD8 (216)	Queue Not Active
0xD9 (217)	Station Not Server
0xDA (218)	Queue Halted
0xDB (219)	Max. Queue Servers
0xFF (255)	Failure

See Appendix B for a complete listing of possible NetWare errors and a description of the four bytes in NWErrno.

Description

This function allows a queue server to restore its own identity after it has assumed its client's identity using the NWChangeToClientRights function. The queue server's login user identification and associated security equivalence list are restored to its original values.

This function does not change any of the path mappings (directory bases) held by the queue server. However, access rights to those directories are adjusted to reflect the rights the queue server has in those directories.

If the queue server has changed some of its path mappings as part of its efforts to service the queue job, the queue server must restore those directory bases.

Files opened using the client's rights before this function is called continue to be accessible with the client's rights. Files opened after this function is called are accessible only with rights of the queue server.

Notes

Only queue servers that have previously changed their identity using the NWChangeToClientRights function can call this function.

See Also

NWChangeToClientRights

NWServiceQueueJob

This function allows a queue server to select a new job for servicing.

Synopsis

```
#include "nwapi.h"

int                 ccode;
uint16              serverConnID;
uint32              queueID;
uint16              targetJobType;
NWQueueJobStruct_t  jobStruct;
NWFileHandle_ta     fileHandle;

ccode=NWServiceQueueJob( serverConnID, queueID, targetJobType,
&jobStruct, fileHandle );
```

Input

serverConnID passes the file server connection ID.

queueID passes the bindery object ID of the queue whose jobs are being serviced.

targetJobType passes the type of the job to be serviced.

jobStruct passes a pointer to the job record of the next available job returned by the QMS. (See Appendix A, ªNWQueueJobStruct_t Structure.º)

fileHandle passes a pointer to the file handle for the file associated with the job to be serviced.

Return Values

0	Successful.
-1	Unsuccessful. One of the following error codes is placed in NWErrno:

0x99 (153)	Directory Full
0xD0 (208)	Queue Error
0xD1 (209)	No Queue
0xD2 (210)	No Queue Server
0xD3 (211)	No Queue Rights
0xD4 (212)	Queue Full
0xD5 (213)	No Queue Job
0xD6 (214)	No Job Right
0xD7 (215)	Queue Servicing
0xD8 (216)	Queue Not Active
0xD9 (217)	Station Not Server
0xDA (218)	Queue Halted
0xDB (219)	Max. Queue Servers
0xFF (255)	Failure

See Appendix B for a complete listing of possible NetWare errors and a description of the four bytes in NWErrno.

Description

This function allows a queue server to select a new job for servicing.

Notes

The requesting client must have previously established itself as a queue server for the target queue.

See Also

NWAbortServicingQueueJob
NWAttachQueueServerToQueue
NWCreateQueueFile
NWFinishServicingQueueJob

NWSetQueueCurrentStatus

This function modifies a queue's status.

Synopsis

```
#include "nwapi.h"

int             ccode;
uint16          serverConnID;
uint32          queueID;
uint8           queueStatus;

ccode=NWSetQueueCurrentStatus( serverConnID, queueID, queueStatus );
```

Input

serverConnID passes the file server connection ID.

queueID passes the bindery object ID of the queue whose status is being updated.

queueStatus passes the control byte that determines the new status. (See Appendix A, ªQueue Status Flags.º)

Output

None.

Return Values

0	Successful.
-1	Unsuccessful. One of the following error codes is placed in NWErrno:

0xD3	No Queue Rights
0xFC	No Such Object
0x30	Invalid Connection ID
0xFF	Failure

See Appendix B for a complete listing of possible NetWare errors and a description of the four bytes in NWErrno.

Description

This function allows the operator to control the addition of jobs and servers to the queue.

Notes

The client making this call must be logged in as one of the objects listed in the Q_OPERATORS property. The requesting client can become a queue operator by specifying its objectID when creating the queue (NWCreateQueue) or by adding its objectID with NWCreateProperty (see the Bindery Services chapter).

See Also

NWAttachQueueServerToQueue
NWCreateQueue
NWDetachQueueServerFromQueue
NWReadQueueCurrentStatus

NWSetQueueServerCurrentStatus

This function updates QMS's copy of a server's status record.

Synopsis

```
#include "nwapi.h"

int     ccode;
uint16  serverConnID;
uint32  queueID;
void    serverStatusRecord[NWMAX_SERVER_
                STATUS_RECORD_LENGTH];

ccode=NWSetQueueServerCurrentStatus( serverConnID, queueID,
serverStatusRecord );
```

Input

serverConnID passes the file server connection ID.

queueID passes the bindery object ID of the queue to which the specified queue server is attached.

serverStatusRecord passes a pointer to the buffer containing the new status record of the queue server (64 bytes).

Output

None.

Return Values

0	Successful.
-1	Unsuccessful. One of the following error codes is placed in NWErrno:

0x99 (153)	Directory Full
0xD0 (208)	Queue Error
0xD1 (209)	No Queue
0xD2 (210)	No Queue Server
0xD3 (211)	No Queue Rights
0xD4 (212)	Queue Full
0xD5 (213)	No Queue Job
0xD6 (214)	No Job Right
0xD7 (215)	Queue Servicing
0xD8 (216)	Queue Not Active
0xD9 (217)	Station Not Server
0xDA (218)	Queue Halted
0xDB (219)	Max. Queue Servers
0xFF (255)	Failure

See Appendix B for a complete listing of possible NetWare errors and a description of the four bytes in NWErrno.

Description

The QMS does not interpret the contents of the status record. The record contains information important to the calling application only. We recommend that the first 4 bytes of this record contain an estimated price for the given server to complete a "standard" job.

Notes

Only workstations that have previously been attached to the queue as a queue server can make this call.

See Also

NWReadQueueServerCurrentStatus