# Installing NUTIL from Save Files

This document outlines how you can distribute NUTIL to your remote installations by using an installation library instead of a tape. There are two main advantages to this approach:

- The installation routine does not require a tape, so there is no physical distribution necessary and no need to create different types of tape for different models of tape drives
- The copies can be sent to remote installations on your network via SNADS or TCP/IP

You should allow at least 3 hours on a dedicated machine to generate the distribution set of save files. If you have a NUTIL Version 6 distribution CD-Rom or tape, the creation of the NAVANSAV library has already been done for you. You can restore the library using the RSTLIB command. On tape, the tape label is NAVANSAV; on CD-ROM the optical file name (OPTFILE) is NAVANSAV.

1. Sign on as the System Security Officer QSECOFR, or as a user profile that has *ALLOBJ special authority. This procedure MUST be performed by a user with *ALLOBJ authority for all programs to function as designed.

2. If you have NUTIL and/or NUMENU installed on the machine your are working on, you will need to rename them while your are defining your installation library. NUTIL and NUMENU must not be in your library list while you do this procedure:

```
RMVLIBLE    LIB(NUTIL)
RMVLIBLE    LIB(NUMENU)

RNMOBJ OBJ(NUTIL)       OBJTYPE(*LIB) NEWOBJ(MST_NUTIL)
RNMOBJ OBJ(NUMENU)      OBJTYPE(*LIB) NEWOBJ(MST_NUMENU)
```

3. Create the library to contain the *SAVF objects

```
CRTLIB LIB(NAVANSAV) AUT(*ALL) TEST('NUTIL Installation library')
```

4. Create the save files to save the objects in to:

```
CRTSAVF SAVF(NAVANSAV/NUTILSV) AUT(*ALL)
            MAXRCDS(*NOMAX) TEXT('NUTIL Installation')

CRTSAVF SAVF(NAVANSAV/NUDTAARASV) AUT(*ALL)
            MAXRCDS(*NOMAX) TEXT('NUTIL Control Data Area')

CRTSAVF SAVF(NAVANSAV/NUMENUSV) AUT(*ALL)
            MAXRCDS(*NOMAX) TEXT('NUMENU Installation')
```

5. Restore the libraries and objects:

```
RSTLIB LIB(NUTIL) DEV(TAP01)
        SEQNBR(2) RSTLIB(NUTIL)

RSTLIB LIB(NUMENU) DEV(TAP01)
        SEQNBR(*SEARCH) RSTLIB(NUMENU)

RSTOBJ OBJ(NUTIL) SAVLIB(NUDTAARA) OBJTYPE(*DTAARA)
        DEV(TAP01) SEQNBR(3) RSTLIB(NUTIL)

RSTOBJ OBJ(QINSTAPP) SAVLIB(NUTIL) DEV(TAP01)
        SEQNBR(1) RSTLIB(NAVANSAV)
```

6. Save the control data area:

```
SAVOBJ OBJ(NUTIL) LIB(NUTIL) OBJTYPE(*DTAARA) DEV(*SAVF)
        SAVF(NAVANSAV/NUDTAARASV) TGTRLS(*CURRENT)
                DTACPR(*YES)
```

7. Save the libraries:

```
SAVLIB LIB(NUTIL) DEV(*SAVF) SAVF(NAVANSAV/NUTILSV)
        SAVFDTA(*YES) DTACPR(*YES) TGTRLS(*CURRENT)
        ACCPTH(*NO)

SAVLIB LIB(NUMENU) DEV(*SAVF) SAVF(NAVANSAV/NUMENUSV)
        SAVFDTA(*YES) DTACPR(*YES) TGTRLS(*CURRENT)
        ACCPTH(*NO)
```

8. Remove the work versions of NUTIL and NUMENU and rename your master versions back:

```
DLTLIB LIB(NUTIL)
DLTLIB LIB(NUMENU)

RNMOBJ OBJ(MST_NUTIL) OBJTYPE(*LIB) NEWOBJ(NUTIL)
RNMOBJ OBJ(MST_NUMENU) OBJTYPE(*LIB) NEWOBJ(NUMENU)
```

9. The installation library is now complete and contains the following objects:

- QINSTAPP The installation program
- NUTILSV Savefile containing the NUTIL library objects
- NUDTAARASV Savefile containing the NUTIL control data area
- NUMENUSV Savefile containing the NUMENU library objects

10. Now save the entire installation library into one savefile:

```
CRTSAVF SAVF(QGPL/NUTILINS)
        TEXT('NUTIL Distribution set for release VnRnMn')
```

The text of the save file can be used to identify which release of NUTIL that has been saved in this save file.

```
SAVLIB LIB(NAVANSAV) DEV(*SAVF) SAVF(QGPL/NUTILINS)
       SAVFDTA(*YES) DTACPR(*YES) TGTRLS(*CURRENT)
       ACCPTH(*NO)
```

The installation library is now ready for distribution.

## Distributing by SNADS

You can send the savefile via SNADS to your remote sites, if they are defined in your network directory.

```
SNDNETF  FILE(QGPL/NUTILINS) TOUSRID((to_user network_address))
```

Please note that this is a big file and depending on your communications line speeds and line types can take a long time to transmit.

To receive it, the remote site does the following

1. Create a save file to receive the distribution:

```
CRTSAVF SAVF(QGPL/NUTILINS)
        TEXT('NUTIL Distribution set for release VnRnMn')
```

2. Access the WRKNETF work panel, for the user ID that the distribution was sent to. Receive the network file into the QGPL/NUTILINS save file that was created in step 1 above.

3. Restore the installation library from the savefile:

```
RSTLIB LIB(NAVANSAV) DEV(*SAVF) SAVF(QGPL/NUTILINS)
```

4. Delete the work save file:

```
DLTF FILE(QGPL/NUTILINS)
```

You can now install NUTIL from the installation instructions document supplied with the release.

## Distributing by TCP/IP

Distribution via TCP/IP can be performed either as a PUT operation or as a GET operation. This document discusses the GET method, but the concept is the same in both cases.

To receive the installation savefile, the remote site does the following

1. Create a save file to receive the distribution:

```
CRTSAVF SAVF(QGPL/NUTILINS)
        TEXT('NUTIL Distribution set for release VnRnMn')
```

You MUST create a save file to receive the file. If you do not have this file available before the transmission starts, the received object will be unusable.

2. Start your FTP session:

```
STRTCPFTP  system_name

Login ID:     User ID on remote system. ENTER defaults to user ID shown
Password:     Enter your password at the remote system
```

Login will initially be connected to your default current library on remote system. When the FTP session starts, perform the following FTP subcommands:

```
CD QGPL                 Change to QGPL on the remote system
LCD QGPL                Change to QGPL on the local system

Type I                  binary image
Mode S                  stream mode

Get QGPL/NUTILINS       Receives saefile data from remote system

Quit                    End the FTP session
```

Verify the FTP worked correctly by checking the contents of the savefile:

```
DSPSAVF FILE(QGPL/NUTILINS)
```

If the command fails, or if the savefile is empty, the FTP session did not work as expected.

3. Restore the installation library from the savefile:

```
RSTLIB LIB(NAVANSAV) DEV(*SAVF) SAVF(QGPL/NUTILINS)
```

4. Delete the work save file:

```
DLTF FILE(QGPL/NUTILINS)
```

You can now install NUTIL from the installation instructions document supplied with the release.