Adabas Online System Cluster Environment Screens

This chapter describes the Adabas Online System screens that apply to a cluster environment.

- Display Cluster Members
- Nucleus File Status
- Nucleus Status Flags
- Cluster Usage
- Estimating Sizes for the Cache Structure in a Cluster Environment
- Estimating Sizes for the Lock Structure in a Cluster Environment
- Maintain the User Table

Display Cluster Members

From the Session Monitoring menu, a new function *Display cluster members* (option A) produces the following screen:

```
16:21:45           *****  A D A B A S   BASIC  SERVICES  *****        2002-07-19
DBID 105                  -  Display Cluster Members  -               PACA002


Total number of nuclei in the cluster: 4
I Sel I Nuc ID I System ID I Jobname  I Status   I  Available Services       I
-------------------------------------------------------------------------------
I  _  I  1     I DAEMVS    I ADANUC01 I Active   I  All                      I
I  _  I  2     I DAEMVS    I ADANUC02 I Inactive I  Lock                     I
I  _  I  3     I DDZMVS    I ADANUC03 I Active   I  All                      I
I  _  I  4     I DDZMVS    I ADANUC04 I Active   I  All                      I
I     I        I           I          I          I                           I
I     I        I           I          I          I                           I
I     I        I           I          I          I                           I
I     I        I           I          I          I                           I
I     I        I           I          I          I                           I
I     I        I           I          I          I                           I
I     I        I           I          I          I                           I
I     I        I           I          I          I                           I
I     I        I           I          I          I                           I


PF1----- PF2------ PF3------ PF4------ PF6----- PF7----- PF8----- PF12-----
Help               Exit      Refresh                          Menu
```

The screen includes a list of nuclei participating in the cluster and information about the current status of each nucleus.

To select a nucleus for additional processing

- Type "S" in the Sel column opposite that nucleus.

To display additional information about a nucleus

- Type "D" in the Sel column opposite that nucleus.

For an Adabas cluster nucleus that has a nonzero nucleus ID, its entry in the parallel participant table (PPT) is displayed in a screen similar to the following:

```
16:21:45           *****  A D A B A S   BASIC  SERVICES  *****        2002-07-19
 DBID 105                     -  Display PPT Entry   -                  PACA002

 Nuc ID. . .   3 Active Nucleus

 Name             Status                          Data Set Name
 ------   -------------------------   ---------------------------------------
 WORK1                                 SAG.ADABAS.DB105.WORKR1
 PLOGR1   Ready to be copied/merged    SAG.ADABAS.DB105.PLOGR1
 PLOGR2   Being written by nucleus     SAG.ADABAS.DB105.PLOGR2









 PF1----- PF2------ PF3------ PF4------ PF6----- PF7----- PF8----- PF12-----
 Help               Exit      Refresh                             Menu
```

Nucleus File Status

From the Resource Utilization menu, the *Nucleus file status* (option N) has been added and is the equivalent of the DNFV operator command.

```
16:03:17          ***** A D A B A S  BASIC  SERVICES *****          2002-05-29
DBID  1955                  - Nucleus File Status -                  PACUN02
NucID 1021

            Locking
      File   NucID  Access count   Update count   State
      -----  -----  -------------  -------------  ----------------------
      24                        0              0  Access
      25                        0              0  Access, Update









 Last page
PF1----- PF2----- PF3----- PF4----- PF7----- PF8----- PF9-------  PF12-----
Help     Repos    Exit     Refresh   -        +                  Menu
```

In an Adabas cluster environment, the file may be locked for exclusive use by another cluster nucleus. If this is the case and the file is in the nucleus file status table, the Locking NucID column for the file shows the ID of the nucleus that has exclusive control.

The Access count / Update count fields display the number of access or update users, respectively, that refer to the specified file in their user queue elements (UQEs). These users either have specified the file in an OP command with R-option or are using the file in an as yet incomplete transaction.

A State field indicates when the file is used for access only or for access and update. The State field indicates to what extent a nucleus can use a file on its own. If the requested use exceeds the given state, the nucleus must first communicate with the other nuclei in the cluster in order to upgrade the state.

Nucleus Status Flags

From the Resource Utilization menu, a second screen has been added to the *System status* (option S), which displays I/O counts for the ASSO, DATA, WORK, and PLOG data sets; remote and local call distribution; and other current session status information.

```
18:50:16          ***** A D A B A S  BASIC  SERVICES *****          2002-05-30
DBID 1955                      -  System Status  -                  PACUS02
NucID: 1022
                  Physical
             Reads          Writes               Call Distribution
           -------------------------   ----------------------------------------
 ASSO             370             67   Remote Logical .............          0
 DATA               3             18   Remote Physical ............          0
 WORK               2            104   Local  Logical .............        860
 PLOG                             67   Local  Physical ............          0

 Logical Reads ........           349   Logical Reads (binary) .....   0000015D
 Buffer Efficiency ....           0.9   No. of HQEs active .........          0
                                        No. of UQEs in User Queue ..          2
 Format Translations ..            51   No. of CQEs waiting in CQ ..          0
 Format Overwrites ....             0
                                        Total intern. Autorestarts .          0
 Throw Backs for ISN ..             0   No. of PLOG switches .......          0
 Throw Backs for Space.             0   No. of Bufferflushes .......         18
                                                              page 1 of 2

PF1----- PF2------ PF3------ PF4------ PF6----- PF7----- PF8----- PF12-----
Help               Exit      Refresh                       +       Menu
```

Press PF8 to display an additional screen that indicates if one or more of the following are in progress:

- Online database save running;
- ADAEND in progress;
- Online file save running;
- READONLY/UTIONLY transition;
- READONLY status;
- Update processing suspended;
- ET-sync in progress;
- UTIONLY status; and
- Exclusive-DB-control utility running.

Otherwise, "Adabas operation normal" is displayed.

```
16:47:41           ***** A D A B A S  BASIC  SERVICES *****          2002-05-29
DBID 1955                      -  System Status  -                   PACUS02
NucID: 1021

                               Nucleus Status Flags
                       ------------------------------------
                       Adabas operation normal













                                                           page 2 of 2


PF1----- PF2------ PF3------ PF4------ PF6----- PF7----- PF8----- PF12-----
Help               Exit      Refresh                        +      Menu
```

Cluster Usage

From the Resource Utilization menu, *Cluster usage* (option X) displays nucleus cluster statistics that are equivalent of those displayed using the DXCACHE, DXLOCK, and DXFILE operator commands.

The equivalent direct command is:

`DISPLAY CLUSTERSTATUS`

```
16:10:31           ***** A D A B A S  BASIC  SERVICES *****          2002-05-29
                               -  Cluster Usage -                    PACUX02

                         Code    Service
                         ----    ----------------
                          C      Cache statistics
                          F      File statistics
                          L      Lock statistics
                          ?      Help
                          .      Exit
                         ----    ----------------
          Code ......... _
          File Number .. 0
          Database ID .. 1955    (WIS1955)             NucID .. 1021






Command ==>
PF1----- PF2----- PF3------ PF4------ PF6----- PF10---- PF11----- PF12-----
Help              Exit                         Fuse     Flist     Menu
```

This section covers the following topics:

- Cache Statistics
- File Statistics
- Lock Statistics

Cache Statistics

Choosing *cache statistics* (option C) from the Cluster Usage menu displays the following menu:

```
16:14:23          ***** A D A B A S  BASIC  SERVICES *****          2002-05-29
                            - Cache Statistics -                   PACUX12

                  Code   Service
                  ----   ----------------------
                    K    Cast-out / Directory
                    P    Publishing requests
                    X    Individual cache blocks
                    .    Exit
                    ?    Help
                  ----   ----------------------

     Code .........
     Database ID .. 1955   (WIS1955)            NucID .. 1021









PF1----- PF2----- PF3----- PF4------ PF6----- PF7----- PF8-----  PF12-----
Help              Exit     Refresh                               Menu
```

The rest of this section describes each of the options on this screen.

- Cast-out / Directory
- Publishing Requests
- All Cache Blocks

Cast-out / Directory

Choosing *cast-out / directory* (option K) from the Cache Statistics menu display the following:

```
16:14:23          ***** A D A B A S  BASIC  SERVICES *****          2002-05-29
DBID  1955                  - Cast-out / Directory -                 PACUX12
NucID 1021

        Cast-out Directory Reads          Directory Reads
        --------------------------        --------------------------
        Total .......          28         Total .......           5
           Sync .....           1            Sync .....           1
           Async ....          27            Async ....           4

        Unlock Cast-out Calls
        --------------------------
        Total .......          28
           Sync .....           1
           Async ....          27




PF1----- PF2----- PF3----- PF4----- PF7----- PF8----- PF9-------  PF12-----
Help              Exit     Refresh                   Detail      Menu
```

Counters have a multiplier column with the following values:

Value	The total shown is in . . .
blank	(factor of 1)
K	kilo (factor of 1,000)
M	mega (factor of 1,000,000)
G	giga (factor of 1,000,000,000)

If a number has a multiplier shown, it has been divided by the multiplier, showing the significant digits to 9 places with no decimal point.

Press PF9 to see the entire value. This value is the exact count up to 20 digits in length.

Publishing Requests

Choosing *publishing requests* (option P) from the Cache Statistics menu display the following:

```
16:26:21          ***** A D A B A S  BASIC  SERVICES *****          2002-05-29
DBID  1955                  - Publishing Requests -                  PACUX12
NucID 1021

                     Publishing Request Category
                     ---------------------------------
                     Update sync .......          34

                     BT or CL or ET ....         162

                     Redo threshold ....           2

                     Full bufferpool ...           0

                     All blocks ........          84

                     Specific RABN .....           0

                     File DS blocks ....           4



PF1----- PF2----- PF3----- PF4----- PF7----- PF8----- PF9-------  PF12-----
Help              Exit     Refresh                   Detail      Menu
```

All Cache Blocks

Choosing *all cache blocks* (option X) from the Cache Statistics menu display the following:

```
16:27:05          ***** A D A B A S  BASIC  SERVICES *****          2002-05-29
DBID  1955                  - All Cache Blocks -                     PACUX12
NucID 1021
  Reads                                 Writes
  --------------------------------      ---------------------------------
  Total .............         167        Total ..............      38,176
     Sync ..........          24           Sync ............      15,148
     Async .........         143           Async ...........      23,028

     In cache ......          49           Written .........      38,176
     Not in cache ..         118           Not written .....           0
     Struc. full ...           0           Struc. full .....           0

  Cast-out Reads                        Other
  --------------------------------      ---------------------------------
  Total .............         212        Validates ..........     187,677
     Sync ..........         212           Invalid .........          43
     Async .........           0        Deletes ............           0
                                           Timeouts ........           0
                                        Redo processes .....           0

PF1----- PF2----- PF3----- PF4----- PF7----- PF8----- PF9-------  PF12-----
Help     Repos    Exit     Refresh  PrevBlk  NxtBlk   Detail      Menu
```

Use PF7 and PF8 to scroll through the cache blocks; use PF2 to reposition.

Statistics are displayed for the following:

- All cache blocks
- Address converter (AC) cache blocks
- Data Storage (DS) cache blocks
- Data Storage space table (DSST) cache blocks
- File control block (FCB) cache blocks
- Normal index (NI) cache blocks
- Upper index (UI) cache blocks

Press PF9 from the above screen to display the following detail screen:

```
16:27:05          ***** A D A B A S  BASIC  SERVICES *****          2002-05-29
DBID  1955                  - All Cache Blocks -                    PACUX12
NucID 1021
Reads                                 Writes
------------------------------------ ----------------------------------------
Total ......                      167 Total .......                     38,176
  Sync .....                       24   Sync ......                     15,148
  Async ....                      143   Async .....                     23,028

  In cache..                       49   Written ...                     38,176
  Not in ...                      118   Not writ ..                          0
  Stru.full.                        0   Stru.full .                          0

Cast-out Reads                        Other
------------------------------------ ----------------------------------------
Total ......                      212 Validates ...                    187,677
  Sync .....                      212   Invalid ...                         43
  Async ....                        0 Deletes .....                        0
                                        Timeouts ..                        0
                                      Redo procs ..                        0


                                    Press Enter to continue
```

File Statistics

Choosing *file statistics* (option F) from the Cluster Usage menu for file 25 displays the following menu:

```
16:37:02          ***** A D A B A S  BASIC  SERVICES *****          2002-05-29
DBID  1955                 - File 25 Statistics -                    PACUX22
NucID 1021
  Reads                                  Writes
  -------------------------------      ---------------------------------
  Total ............          67        Total ..............      20,157
     Sync ..........           0           Sync ............       7,583
     Async .........          67           Async ...........      12,574

     In cache ......           0           Written .........      20,157
     Not in cache ..          67           Not written .....           0
     Struc. full ...           0           Struc. full .....           0

  Cast-out Reads                         Other
  -------------------------------      ---------------------------------
  Total ............          78        Validates ..........      79,248
     Sync ..........          78           Invalid .........           0
     Async .........           0        Deletes ............           0
                                           Timeouts ........           0
                                        Redo processes .....           0

PF1----- PF2----- PF3----- PF4----- PF7----- PF8----- PF9-------  PF12-----
Help     Repos    Exit     Refresh                   Detail      Menu
```

Lock Statistics

Choosing *lock statistics* (option L) from the Cluster Usage menu displays the following menu:

```
16:38:16          ***** A D A B A S  BASIC  SERVICES *****          2002-05-29
                             - Lock Statistics -                    PACUX32

Code   Service                        Code   Service
----   ---------------------------    ----   -------------------------------
  A    Buffer flush lock                I    Global update command sync lock
  B    Checkpoint lock                  J    Hold ISN lock
  C    DSF lock                         K    New-Data-RABN lock
  D    ETID lock                        L    Online save lock
  E    File-lock-table lock             M    Parameter lock
  F    FST lock                         N    Recovery lock
  G    GCB lock                         O    RLOG lock
  H    Global ET sync lock              P    Security lock
  .    Exit                             Q    Spats lock
  ?    Help                             R    Unique descriptor lock
----   ---------------------------    ----   -------------------------------

       Code ......... _
       Database ID .. 1955   (WIS1955)            NucID .. 1021


PF1----- PF2----- PF3------ PF4------ PF6----- PF7------ PF8----- PF12-----
Help             Exit      Refresh                               Menu
```

Each of the options on the Lock Statistics menu displays statistics for a particular lock. For each lock, the screen displays obtain and release information about the various types of that lock that are currently in use by a cluster nucleus:

- The system may obtain locks conditionally or unconditionally, synchronously or asynchronously. A conditional request for a lock may be granted or rejected.
- Releases may be performed synchronously or asynchronously.

Hold ISN Lock

Choosing *hold ISN lock* (option J) from the Lock Statistics menu displays the following:

```
16:38:16          ***** A D A B A S  BASIC  SERVICES *****          2002-05-29
DBID  1955                    - Hold ISN Lock -                     PACUX32
NucID 1021

     Obtains                                Releases
     -------------------------------        ----------------------------
     Conditional ....        16,017         Issued .......         16,017
        Granted .....        16,017            Sync ......         15,971
        Rejected ....             0            Async .....             46
     Unconditional ..             0

     Sync ...........           158
     Async ..........        15,859









PF1----- PF2----- PF3------ PF4------ PF6----- PF7------ PF8----- PF12-----
Help     Repos    Exit      Refresh            PrevLok   NxtLok   Menu
```

Use PF7 and PF8 to scroll through the locks; use PF2 to reposition.

Estimating Sizes for the Cache Structure in a Cluster Environment

These instructions describe how to use the structure size calculator to estimate the size for the cache structure in a cluster environment. The cache structure should be made large enough to provide sufficient space for:

- Tracking all blocks kept in the buffer pools of all connected cluster nuclei (directory elements) and
- Keeping all changed blocks until they are written to the database (data elements).

The assignment of total cache space into directory and data elements is done via the DIRRATIO and ELEMENTRATIO ADARUN parameters.

The actual cache structure size value is dependent on coupling facility internals and may vary across different coupling facility levels. If the estimates by this structure size calculator are too far off the real allocations reported by cluster nuclei, you can tweak the directory element size value to bring the calculator more in line with the actual coupling facility being used.

To access and use the space calculator for the cache strucure in a cluster environment

1. Select option **S** on the **Basic Services Main Menu** in AOS.

   The **Space Calculation** menu appears.

2. Select option **C** on the **Space Calculation** menu.

   The Cache Structure Calculator panel appears.

```
13:01:16          ***** A D A B A S  BASIC  SERVICES *****          2007-10-02
DBID 1955             -  Cache Structure Calculator  -              PSPC002

Smallest block size in DB ....... 4092
Largest block size in DB ........ 27990
Buffer pool size (LBP) .......... 104857600___
Size proper for caching blocks .. 104800000___
Max nuclei in cluster ........... 3
Directory element size .......... 400
Cache structure size (in KB) .... 256000___

For minimum calculation, leave cache structure size field empty.
Modify values, press Enter to provide estimates below.

Cache CFRM SIZE/INITSIZE ........ 256000      ( 250.0      MB)
ADARUN DIRRATIO ................. 62
ADARUN ELEMENTRATIO ............. 49
Cache directory elements ........ 128597
Cache data elements ............. 101633
Cache data element size ......... 2048

PF1----- PF2------ PF3------ PF4------ PF6----- PF7----- PF8----- PF12-----
Help               Exit      Lock                                Menu
```

3. Specify values for the following fields on the Cache Structure Calculator panel.

Field	Description	Default
Smallest block size	Specify a value between 1024 and 32768 bytes.	The smallest block size of the current Adabas Online System database ID.
Largest block size	Specify a value between 1024 and 32768 bytes. If the value of the Smallest block size field exceeds this value, then the Smallest block size value is swapped in.	The largest block size of the current Adabas Online System database ID.
Buffer pool size	Specify a value between 80,000 and 999,999,999,999 bytes.	The value of the LBP parameter setting for the current Adabas Online System database ID.
Size proper for caching blocks	Specify a value between 100000 - 999,999,999,999 bytes.	The LBP parameter of the current Adabas Online System database ID, rounded down to nearest 100000. "Size proper" means that this does not include the overhead in the cache structure required for administering these blocks. Thus, this value specifies how much space should be available in the cache structure for keeping changed blocks between buffer flushes and for buffering blocks so that the cluster nuclei do not have to read them from the database.
Max Nuclei in cluster	Specify a value between 2 and 32.	3
Directory element size	Specify a value between 100 and 999 bytes. This value specifies how much space (including the overhead for the access paths) will be used in the cache structure by each directory element.	400
Cache Structure size	Specify a blank for the minimum calculation or specify a value between 100 and 999,999,999 (KB). Although this value is given as an output field, you may want to propose a cache structure size, to see how to allocate the cache space (directory and data elements).	blank

4. Press Enter after all values in the previous step are specified.

   The following output fields on the screen are filled.

Field	Description
Cache CFRM SIZE/INITSIZE	The recommended cache structure SIZE or INITSIZE specification in the coupling facility resource management policy.
ADARUN DIRRATIO	The recommended ADARUN DIRRATIO parameter settings for the cluster nuclei.
ADARUN ELEMENTRATIO	The recommended ADARUN ELEMENTRATIO parameter settings for the cluster nuclei.
Cache directory	The estimated directory and data element counts resulting from the SIZE/INITSIZE and DIRRATIO settings.
Cache data elements	The estimated directory and data element counts resulting from the SIZE/INITSIZE and ELEMENTRATIO settings.
Cache data element size	This (accurate) value depends only on the largest Asso/Data/Work block size in the database.

Estimating Sizes for the Lock Structure in a Cluster Environment

These instructions describe how to use the structure size calculator to estimate the size for the lock structure in a cluster environment. The lock structure should be made large enough to provide sufficient space for:

- Keeping the lock record elements for all locks held at the same time, and
- Avoiding too much false contention between locks on different resources.

The number of lock table entries and record elements are shown in the results for comparison with the related cluster nucleus message (ADAX70) and to aid your own calculations.

The actual lock structure size value is dependent on coupling facility internals and may vary across different coupling facility levels. If the estimates by this structure size calculator are too far off the real allocations reported by cluster nuclei, you can tweak the lock record element size value to bring the calculator more in line with the actual coupling facility being used.

To access and use the space calculator for the lock strucure in a cluster environment

1. Select option **S** on the **Basic Services Main Menu** in AOS.

   The **Space Calculation** menu appears.

2. Select option **C** on the **Space Calculation** menu.

   The Cache Structure Calculator panel appears.

```
13:01:16          ***** A D A B A S  BASIC  SERVICES *****          2007-10-02
DBID 1955             -  Cache Structure Calculator  -              PSPC002

Smallest block size in DB ....... 4092
Largest block size in DB ........ 27990
Buffer pool size (LBP) .......... 104857600___
Size proper for caching blocks .. 104800000___
Max nuclei in cluster ........... 3
Directory element size .......... 400
Cache structure size (in KB) .... 256000___

For minimum calculation, leave cache structure size field empty.
Modify values, press Enter to provide estimates below.

Cache CFRM SIZE/INITSIZE ........ 256000      ( 250.0      MB)
ADARUN DIRRATIO ................. 62
ADARUN ELEMENTRATIO ............. 49
Cache directory elements ........ 128597
Cache data elements ............. 101633
Cache data element size ......... 2048

PF1----- PF2------ PF3------ PF4------ PF6----- PF7----- PF8----- PF12-----
Help               Exit      Lock                                 Menu
```

3. Press PF4 to access the Lock Structure Calculator panel:

```
13:42:29          ***** A D A B A S  BASIC  SERVICES *****          2007-08-20
DBID 1955              -  Lock Structure Calculator  -              PSPL002

Max files in database (MAXFILES) ...... 400
Max number of parallel users (NU) ..... 200_____
Number of hold queue elements (NH) .... 40000
Unique descriptor pool size (LDEUQP) .. 50000
Lock record element size ............... 260
Lock structure size (in KB) ............

For minimum calculation, leave lock structure size field empty.
Modify values, press Enter to provide estimates below.

Lock CFRM SIZE/INITSIZE ....... ....... 13232     ( 12.9      MB)
Number of lock table entries   ........ 131072
Number of lock record elements ........ 46157      Required min .. 45175




PF1----- PF2------ PF3------ PF4------ PF6----- PF7----- PF8----- PF12-----
Help               Exit      Cache                                Menu
```

4. Specify values for the following fields on the Lock Structure Calculator panel.

Field	Description	Default
Max files in database	Specify a value between 3 and 5000. This is the same as the MAXFILES parameter of the ADADEF and ADAORD utilities.	The MAXFILES parameter setting of the current AOS database ID.
Max number of parallel users	Specify a value between 20 and 16,777,215.	The NU parameter setting of the current AOS database ID.
Number of hold queue elements	Specify a value between 20 and 16,777.215. .	The NH parameter setting of the current AOS database ID.
Unique descriptor pool	Specify a value between 1 and 999,999,999.	The LDEUQP parameter setting of the current AOS database ID.
Lock record element size	Specify a value between 100 and 999. This parameter specifies how much space (including the overhead for the access paths) will be used by each lock record element in the lock structure.	260
Lock structure size	Specify a blank for the minimum calculation or specify a value between 100 and 999,999,999 (KB). Although this value is given as an output field, you may want to propose a lock structure size, to see how to allocate the lock table entries and lock table elements.	blank

5. Press Enter after all values in the previous step are specified.

   The following output fields on the screen are filled.

Field	Description
Lock CFRM SIZE/INITSIZE	The recommended lock structure SIZE or INITSIZE specification in the coupling facility resource management policy.
Number of lock table entries	The calculated count of lock table entries resulting from the SIZE/INITSIZE setting.
Number of lock record elements	The estimated count of lock record elements resulting from the SIZE/INITSIZE setting. You must actually start a cluster nucleus with the specified parameters to see how many lock record elements it gets from the lock structure. The number on the right side is the minimum number of lock record elements required to be available by the starting cluster nuclei.

Maintain the User Table

Note:
This option is available in Adabas nucleus cluster environments only.

A new function has been added to the Session Opercoms menu to support the CLUFREEUSER command. When option V (maintain user table) is selected, the following screen is displayed:

```
16:59:29          ***** A D A B A S  BASIC  SERVICES *****          2002-05-29
                         - User Table Maintenance -                PACIV02

                      Code    Service
                      ----    -------------------------
                       C      Begin CLUFREEUSER process
                       ?      Help
                       .      Exit
                      ----    -------------------------
         Code ......... _
         TNA .......... 0______
         UID .......... ____________________
         Force ........ _
         Global ....... _

         Database ID .. 1955  (WIS1955)              NucID .. 1022




Command ==>
PF1----- PF2------ PF3------ PF4------ PF6----- PF7----- PF8----- PF12-----
Help               Exit                                          Menu
```

The CLUFREEUSER command is only valid in cluster environments. It can be issued against the local nucleus only or, with the Global option, against all active and inactive nuclei in the cluster.

The command is used to delete leftover user table elements (UTEs) in common storage that are no longer associated with user queue elements (UQEs) in a nucleus where

TNA	is a decimal number specifying the timeout value in seconds. UTEs that are not used during the time specified may be deleted if other conditions are fulfilled. If TNA is not specified, UTEs may be deleted without regard to their recent use.	
UID	is a character string or hexadecimal byte string as follows:	
	cccccccc	where the argument is 1-8 letters, digits, or embedded ’-’ signs without surrounding apostrophes.
	’cccccccc’	where the argument is 1-8 characters with surrounding apostrophes.
	X’xxxxxxxxxxxxxxxx’	where the argument is an even number of 2-16 hexadecimal digits enclosed by X’ ’.
	A character string must be enclosed in apostrophes if it contains characters other than letter, digits, or embedded ’-’ signs. If a specified character string is less than 8 characters long, it is implicitly padded with blanks. If a specified hexadecimal string is shorter than 16 hexadecimal digits, it is implicitly padded with binary zeros. If the last 8 bytes of a user’s 28-byte communication ID match a specific user ID or user ID prefix, that user’s UTE may be deleted if other conditions are fulfilled. If UID not specified, UTEs may be deleted regardless of their user IDs.	
FORCE	Delete leftover UTEs even if the users are due a response code 9, subcode 20. If FORCE is not specified, such UTEs are not deleted. Before using the FORCE parameter, ensure that the users owning the UTEs to be deleted will not expect any of their transactions to remain open. Specify FORCE on this screen by marking the Force field with any character.	
GLOBAL	Delete leftover UTEs throughout the Adabas cluster if they are no longer associated with UQEs and are eligible according to the other specified parameters. Additionally and subject to the other rules, delete leftover UTEs if their assigned nuclei have terminated since their last use. If GLOBAL is not specified, only UTEs assigned to the local nucleus and used since the nucleus start are eligible for deletion. Specify GLOBAL on this screen by marking the Global field with any character.	