

Initialization Parameters

This chapter describes the initialization parameters needed for an Adabas Parallel Services environment. It covers the following topics:

- ADARUN Initialization Parameters
- ADACOM Initialization Parameters
- Setting ADARUN Parameters for Cluster Nuclei

ADARUN Initialization Parameters

ADARUN parameters are used to customize the Adabas environment. For information about ADARUN parameters and the format of ADARUN control statements, read your Adabas operations documentation.

For Adabas Parallel Services environments, two types of initialization parameters must be set based on the ADARUN parameter PROGRAM.

PROGRAM - Execute an ADARUN Program

Parameter	Specify...	Possible Values	Default
PROGRAM	the ADARUN program	ADANUC ADACOM	none

The PROGRAM parameter specifies the name of the program being run, and must always be specified. There is no default.

- To run an Adabas nucleus, the name must be "ADANUC".
- To set up an ADACOM task, the name must be "ADACOM" (no other ADARUN parameters are recognized for the ADACOM program run).

For example, the following example starts an Adabas Parallel Services nucleus:

```
ADARUN PROG=ADANUC,CLUSTER=LOCAL,NUCID=3, . . .
```

ADACOM Initialization Parameters

An unlimited number of Adabas Parallel Services nucleus clusters, each with up to 31 members sharing a common database, can be defined for an operating system image.

The ADACOM initialization task (ADARUN PROGRAM=ADACOM) must be run in order to set up the environment, and it must be maintained in order to monitor and control the nuclei of one or more Adabas Parallel Services clusters.

ADACOM initialization parameters specify the Router ID / DBID combinations (sets) that the ADACOM is to manage.

- The Router ID identifies the SVC number on OS/390, z/OS, or VSE, or the IDTNAME on BS2000/OSD. The Router ID value must be the same within a cluster; however, the same Router ID may be used for different clusters.
- The DBID identifies the external physical database shared by a particular cluster of nuclei and known to the application.

Other ADACOM parameters are discussed in the following sections.

Although a single ADACOM job can run all Router ID / DBID sets in an Adabas Parallel Services environment, it is possible to run multiple ADACOM tasks simultaneously with the same, mixed, or completely different Router ID / DBID sets. An ADACOM subtask is attached to each Router ID / DBID set for each ADACOM task in which it occurs.

ADACOM prints global messages that apply to all Router ID / DBID sets to the data set or file with DD name/link name COMPRINT. Furthermore, ADACOM prints messages for each individual Router ID / DBID set to an output data set or file with the DD name/link name *PSSdddd*, where *ss* is the last two digits of the SVC number and *dddd* is the DBID. (On BS2000, the *ss* number is derived for each separate IDTNAME as the first available, counting backward from 255.) On OS/390 and z/OS, ADACOM automatically allocates this data set in the spool with SYSOUT=*, if it is not explicitly specified.

For a sample job to run ADACOM, read the OS/390 or z/OS section *Create a Startup Procedure for ADACOM*.

DBID - Database Identification

Parameter	Specify...	Minimum	Maximum	Default
<u>DBID</u>	the database to be used.	1	65000	none

The DBID parameter designates the ID of an Adabas Parallel Services cluster's external physical database; that is, the database number that the user programs address to send commands to the single physical database of an Adabas Parallel Services nucleus cluster.

This number must be unique among all Adabas database IDs, NUCIDs, Natural buffer pool IDs, etc.

FORCE - Force Restart after Abnormal Termination

Parameter	Specify...	Possible Values	Default
<u>FORCE</u>	whether ADACOM forces a restart after an abnormal termination.	YES NO	NO

If Adabas Parallel Services believes there are still active nuclei, ADACOMs, or users on an image after a termination, a NU parameter value that is different from the NU value already in effect will not be recognized on restart. If you are certain that Adabas Parallel Services is wrong in its belief, you can use FORCE=YES to force a clean restart.

Note, however, that if a cluster nucleus or an ADACOM with the same SVC number or IDTNAME is active on the image where FORCE=YES is used, it will crash.

Notes:

1. FORCE=YES works only when the NU parameter value is being changed and has the effect of resetting the environment.
2. The nucleus ADARUN parameter FORCE is neither seen nor used by the SVCCLU. The ADACOM parameter FORCE may only be used to change the NU that is valid for the cluster.
3. If you use the ADACOM FORCE parameter, remember to remove it from ADACOM after you have reset the environment.

IDTNAME - Define ID Table Name (BS2000 Only)

Parameter	Specify...	Possible Values	Default
<u>IDTNAME</u>	the IDT common memory pool name to be used for the Adabas Parallel Services cluster session.	ADAiiii	ADABAS5B

The IDTNAME defines the name of the common memory pool used to find communication details for this nucleus. This common memory pool will be defined as Global.

Value is "ADAiiii", maximum of eight characters.

For example, IDTNAME=ADAPROD1

NU - Number of User Table Elements on the OS Image

Parameter	Specify...	Minimum	Maximum	Default
<u>NU</u>	the number of users that can be active in parallel on cluster nuclei in the image.	20	16 777 215	200

In the extended CSA (ECSA), the SVCCLU maintains a user table with entries (UTES) containing information about every active user in the cluster nuclei on the operating system image. A UTE is assigned when a user issues an OP command or (if the user did not issue an OP command) at the first Adabas command. The UTE is released when the user issues a CL command or when a timeout occurs.

The ADACOM NU parameter specifies the number of concurrent users (UTES) allowed for all the nuclei of a cluster. The first ADACOM started governs the value for NU: different values set for subsequent nuclei or ADACOMs are ignored.

To manually change the NU value, you must stop all cluster nuclei and ADACOM tasks in the image, modify the NU value for all the nucleus and ADACOM jobs, and then restart.

When the NU parameter is set to zero, any space allocated for the user table is freed, the Adabas Parallel Services control block is freed, and the ADACOM task terminates. However, if ADACOM believes that there are active nuclei, ADACOMs, or users, and FORCE=YES is not used, no action is taken.

For example, the following parameter would run the Adabas Parallel Services cluster nuclei with 500 elements in the user table:

NU=500

SVC - Interregion Communication Number

Parameter	Specify...	Possible Values	Default
<u>S</u> VC	the supervisor call number to be used for the Adabas Parallel Services nucleus cluster session.	OS/390 or z/OS: 200-255 VSE: see text	OS/390 or z/OS: 249 VSE: 45

The SVC is used to perform various Adabas internal functions; the number is used to communicate between the users and the database.

The SVC number is specified as an integer and must correspond to the number used for the version 7.4 Adabas SVC (ADASVC).

- For OS/390, valid SVC values are 200-255.
- For VSE/ESA, 45 is the recommended value but any free SVC value can be used. Read the Adabas installation documentation for information about finding free VSE Adabas SVC values.

For example, the following parameter will execute an Adabas Parallel Services nucleus cluster session on an OS/390 image using ADASVC 202.

SVC=202

Setting ADARUN Parameters for Cluster Nuclei

Software AG recommends that you use the default settings (or your existing values) of the Adabas ADARUN parameters for each Adabas nucleus in an Adabas Parallel Services cluster, and then tune the values after analyzing the performance of the node or cluster. Read *Performance and Tuning* for information about expected differences.

Session statistics can be used to determine the best settings for each parameter. The statistics are printed automatically at the end of a session, but can also be displayed using nucleus or ADACOM operator commands during the session.

This section describes the ADARUN parameters used to invoke a cluster nucleus (ADARUN PROGRAM=ADANUC).

- Global ADARUN Parameters
- Parameter Types
- Parameter Directory
- Specifying ADARUN Parameters for Cluster Nuclei

Global ADARUN Parameters

ADARUN parameters that must be the same for all nuclei in the cluster are called "global".

Some global parameters are set at nucleus startup and cannot be changed during the ensuing session; other global parameters can be changed during a session.

Changing Parameter Values at Nucleus Startup

After the first nucleus in an Adabas Parallel Services cluster starts, message services are used to communicate the ADARUN parameter settings of the first nucleus to all subsequent cluster nuclei. Each following nucleus receives this information during initialization and determines whether its global nonchangeable parameters are equal to those of the first nucleus.

If they are not equal, the nucleus fails with a parameter error. The nonequal global changeable parameters are reset to the value retrieved from the message services and a corresponding message is printed.

Changing Parameter Values During a Session

On a running system, a cluster nucleus may want to modify one or more of the "changeable" global parameters. This nucleus acquires a "parameter change lock", makes the changes in its local parameter area, and communicates the changes to the other cluster nuclei using message services.

All other nuclei in the cluster receive the messages containing the global parameters that have changed, change the parameters in their local parameter area, and send the "acknowledge" message.

Parameter Types

A cluster nucleus requires

- *global* parameters. Adabas Parallel Services enforces the same value for all nuclei in a cluster. Some of these parameters are modifiable (*GM*) during a session using an operator command or AOS (*NISNHQ*, *NONDES*, and *AOSLOG* are only modifiable using AOS); others are fixed (*GF*) and cannot be modified.
- *local* parameters, which can be different for each nucleus. Some of these parameters are modifiable (*LM*) using an operator command or AOS; others are fixed (*LF*) and cannot be modified.

A few Adabas ADARUN parameters are not available or applicable to a cluster nucleus (*No*).

Parameter Directory

Note:

All Adabas Caching Facility ADARUN parameters are supported as local, modifiable parameters.

Parameter	Usage	No*	LF	LM	GF	GM
<u>A</u> OSLOG	Log to DDPRINT commands issued by AOS or ADADBS OPERCOM that modify the active nucleus			Y		
<u>A</u> REXCLUDE	Exclude file(s) from autorestart		Y			

Parameter	Usage	No*	LF	LM	GF	GM
<u>ARMNAME</u>	Name used to activate ARM		Y			
<u>ASSOCACHE</u>	Controller caching control for the Associator component		Y			
<u>ASYTVS</u>	Asynchronous buffer flush based on vol-ser			Y		
<u>CDXnn</u>	Collation descriptor user exit(s)				Y	
<u>CLOGDEV</u>	Multiple command log device type		Y			
<u>CLOGLAYOUT</u>	Define command log format		Y			
<u>CLOGMRG</u>	Automatic command log merge control in a cluster environment					Y
<u>CLOGSIZE</u>	Multiple command log size (blocks)		Y			
<u>CLUCACHENAME</u>	Cluster cache structure name (Cluster Services only)				Y	
<u>CLUCACHESIZE</u>	Cluster cache area size (Parallel Services only)				Y	
<u>CLUGROUPNAME</u>	Cluster group name (Cluster Services only)				Y	
<u>CLULOCKNAME</u>	Cluster lock structure name (Cluster Services only)				Y	
<u>CLULOCKSIZE</u>	Cluster lock area size (Parallel Services only)				Y	
<u>CLUCACHETYPE</u>	Cluster cache data storage type (Parallel Services only)				Y	
<u>CLUSTER</u>	Adabas cluster session control				Y	
<u>CT</u>	Command time limit (seconds)					Y
<u>DATACACHE</u>	Controller caching control for the Data Storage component		Y			
<u>DIRRATIO/ELEMENTRATIO</u>	Ratio of directory entries to data elements in a cluster cache structure/area				Y	
<u>DBID</u>	Database ID (physical)				Y	
<u>DEVICE</u>	Device type of the first ASSO extent				Y	
<u>DSF</u>	Delta Save Facility control				Y	
<u>DSFEX1</u>	Delta Save Facility user exit				Y	
<u>DTP</u>	Distributed transaction processing control	Y			Y	
<u>DUALCLD</u>	Dual command log device		Y			
<u>DUALCLS</u>	Dual command log size (blocks)		Y			
<u>DUALPLD</u>	Dual protection log device		Y			
<u>DUALPLS</u>	Dual protection log size (blocks)		Y			

Parameter	Usage	No*	LF	LM	GF	GM
<u>FASTPATH</u>	Adabas Fastpath control				Y	
<u>FMXIO</u>	Limit parallel I/O operations by LFIOP flush processing			Y		
<u>FORCE</u>	Overwrite IDTE		Y			
<u>HEXnn</u>	Hyperdescriptor exit(s)				Y	
<u>IDTNAME</u>	BS2000 ID table name				Y	
<u>IGNDIB</u>	Ignore DIB entry		Y			
<u>IGNDTP</u>	Ignore distributed transaction processing area (Work part 4)	Y				
<u>INTNAS</u>	Interval between nucleus statistic checkpoints (SYNS 60)				Y	
<u>LBP</u>	Length of buffer pool		Y			
<u>LCP</u>	Length of security pool		Y			
<u>LDEUQP</u>	Length of unique (UQ) descriptor pool		Y			
<u>LDTP</u>	Length of distributed transaction processing area (Work part 4)	Y				
<u>LFIOP</u>	Length of asynchronous flush pool		Y			
<u>LFP</u>	Length of internal format buffer pool		Y			
<u>LI</u>	Length of ISN list table (TBI)		Y			
<u>LOCAL</u>	Nucleus (cluster) unknown to the network				Y	
<u>LOGCB</u>	Log control block			Y		
<u>LOGCLEX</u>	Log command log extension (CLEX)			Y		
<u>LOGFB</u>	Log format buffer			Y		
<u>LOGGING</u>	Logging of Adabas commands			Y		
<u>LOGIB</u>	Log ISN buffer			Y		
<u>LOGIO</u>	Log I/O activity			Y		
<u>LOGRB</u>	Log record buffer			Y		
<u>LOGSB</u>	Log search buffer			Y		
<u>LOGSIZE</u>	Maximum command log size		Y			
<u>LOGUX</u>	Log user exit B data			Y		
<u>LOGVB</u>	Log value buffer			Y		
<u>LP</u>	Length of data protection area (Work part 1)		Y			
<u>LQ</u>	Length of sequential command table		Y			

Parameter	Usage	No*	LF	LM	GF	GM
<u>LRDP</u>	Length of the deferred caching redo pool in cluster environments.		Y			
LS	Length of sort area		Y			
LU	Length of intermediate user buffer				Y	
<u>LWKP2</u>	Length of ISN list processing area (Work part 2)		Y			
LWP	Length of Adabas work pool		Y			
<u>MODE</u>	Mode of operation	Y				
<u>MSGBUF</u>	Size of the message buffer		Y			
<u>MXMSG</u>	Maximum message reply time between cluster nuclei in Cluster Services or Parallel Services		Y			
<u>MXTNA</u>	Maximum inactivity time limit override for a user				Y	
<u>MXTSX</u>	Maximum Sx execution time limit override for a user				Y	
MXTT	Maximum transaction time limit override for a user				Y	
<u>NAB</u>	Number of attached buffers		Y			
NC	Number of command queue elements		Y			
<u>NCLOG</u>	Number of command logs		Y			
NH	Number of hold queue elements		Y			
<u>NISNHQ</u>	Number of ISNs in hold queue for user					Y
<u>NONDES</u>	Non-descriptor searches					Y
<u>NPLOG</u>	Number of protection logs		Y			
<u>NQCID</u>	Number of active command IDs per user					Y
<u>NSISN</u>	Number of ISNs per ISN table element		Y			
NT	Number of threads		Y			
NU	Number of user queue elements		Y			
<u>NUCID</u>	Custer nucleus ID		Y			
<u>OPENRQ</u>	Open command required				Y	
<u>PLOGDEV</u>	Multiple protection log device type		Y			
<u>PLOGRQ</u>	Protection log required				Y	
<u>PLOGSIZE</u>	Multiple protection log size (blocks)		Y			
<u>PREFETCH**</u>	Prefetch/multifetch feature control (see note below)	Y				

Parameter	Usage	No*	LF	LM	GF	GM
<u>PREFICMD</u> **	Include command from prefetch/multifetch (see note below)	Y				
<u>PREFIFIL</u> **	Include file from prefetch/multifetch (see note below)	Y				
<u>PREFNREC</u> **	Multifetch record count (see note below)	Y				
<u>PREFSBL</u> **	Prefetch single buffer length (see note below)	Y				
<u>PREFTBL</u> **	Prefetch total buffer length (see note below)	Y				
<u>PREFXCMD</u> **	Exclude command from prefetch/multifetch (see note below)	Y				
<u>PREFXFIL</u> **	Exclude file from prefetch/multifetch (see note below)	Y				
<u>QBLKSIZE</u>	Sequential data set/file block size (optimized by ADAIOR)		Y			
<u>READONLY</u>	Read-only session control	Y				
<u>REVIEW</u>	Adabas Review control			Y		
<u>SMGT</u>	Error handling (PIN) facility control		Y			
<u>SORTCACHE</u>	Controller caching control for the Adabas sort area component		Y			
<u>SPT</u>	Adabas triggers and stored procedures control				Y	
<u>SVC</u>	SVC number		Y			
<u>TCP/IP</u>	TCP/IP access control			Y		
<u>TCPURL</u>	TCP/IP universal resource locator (URL)			Y		
<u>TEMPCACHE</u>	Controller caching for the Adabas temp area component		Y			
<u>TFLUSH</u>	Synchronous buffer flush time	Y				
<u>TLSCMD</u>	Time limit for S1, S2, and S4 complex searches (seconds)				Y	
<u>TNAA</u>	Non-activity time limit (access-only users)					Y
<u>TNAE</u>	Non-activity time limit (ET logic users)					Y
<u>TNAX</u>	Non-activity time limit (exclusive update users)					Y
<u>TT</u>	Transaction time limit					Y
<u>UEXn</u>	User exits: 1, 3, 4, 5, 8		Y			
<u>UEXn</u>	User exits: 2, 12					
<u>UEXn</u>	User exits: 6, 9 (for utilities)	Y				

Parameter	Usage	No*	LF	LM	GF	GM
<u>U</u> TIONLY	Utilities-only session				Y	
<u>V</u> ISTA	Adabas Vista control				Y	
<u>W</u> ORKCACHE	Controller caching for the Adabas work area component		Y			

Notes:

1. * Adabas Parallel Services 7.5 does not support DTP=TM or DTP=RM. It does support DTP=ET, which is a parameter setting that must be the same for all cluster nuclei and cannot be changed (global, fixed).
2. ** The PREF_{xxx} parameters are used with application programs (PROGRAM=USER) making Adabas calls. They have no effect when specified for an Adabas nucleus.

Specifying ADARUN Parameters for Cluster Nuclei

When specifying ADARUN session parameters for Adabas Parallel Services cluster nuclei:

- ensure that the correct program to be executed is specified (PROG=ADANUC); and
- determine which setting is applicable for the SVC parameter for the session.

The CLOGMRG, CLUSTER, CLUCACHESIZE, CLUCACHETYPE, CLULOCKSIZE, DIRRATIO / ELEMENTRATIO, LRDP, and NUCID parameters are used by the Adabas Parallel Services cluster nucleus and its environment.

If protection logs and/or command logs are used in a cluster environment, they must be dual or multiple logs and all nuclei must use them. All cluster nuclei must have the same PLOGRQ setting.

The remaining Adabas cluster nucleus parameters are the same as those of a standard Adabas nucleus. For more information, read Adabas operations documentation.