

# About 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.

For your convenience, ADARUN parameters that are most significant to Adabas Parallel Services usage are described in *Useful ADARUN Parameters*.

This chapter covers the following topics:

- Global ADARUN Parameters
  - ADARUN Parameter Usage in Cluster Environments
  - Specifying ADARUN Parameters for Cluster Nuclei
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## 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:

- When you set a value for a global parameter that cannot be changed after the first nucleus in an Adabas cluster has started, intracluster messages are used to communicate the ADARUN parameter settings of the first nucleus to all subsequent cluster nuclei. Each subsequent 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 intracluster messages and a corresponding message is printed.

- If you change the value of a global parameter that can be changed during a running session, the nucleus on which you make the change acquires a "parameter change lock", makes the changes in its local parameter area, and communicates the changes to the other cluster nuclei using intracluster messages.

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

## ADARUN Parameter Usage in Cluster Environments

A cluster nucleus makes use of:

- *global* parameters, whose values are enforced by Adabas Parallel Services to be equal for all nuclei in a cluster. Some of these parameters can be modified (globally modifiable) during a session using an operator command or the Adabas Online System (NISNHQ, NONDES, and AOSLOG are only modifiable using AOS); others are fixed (globally fixed) and cannot be modified while the nuclei in the cluster are running.
- *local* parameters, which can be different for each nucleus. Some of these parameters are modifiable (locally modifiable) using an operator command or the Adabas Online System; others are fixed (locally fixed) and cannot be modified.

A few Adabas ADARUN parameters are not available to a cluster nuclei (No).

In the following table, the "No" column indicates which ADARUN parameters are not available to a cluster nucleus, the "LF" column indicates whether the parameter is a locally fixed parameter, the "LM" column indicates whether the parameter is a locally modifiable parameter, the "GF" column indicates whether the parameter is a globally fixed parameter, and the "GM" column indicates whether the parameter is a globally modifiable parameter.

Parameter	Usage	No	LF	LM	GF	GM
<u>AOSLOG</u>	Log to DDPRINT commands issued by AOS or ADADBS OPERCOM that modify the active nucleus			X		
<u>AREXCLUDE</u>	Exclude file(s) from autorestart		X			
<u>ARMNAME</u>	Name used to activate ARM		X			
<u>ASSOCACHE</u>	Controller caching control for the Associator component		X			
<u>ASYTVS</u>	Asynchronous buffer flush based on volser			X		
CACHE	Load ADACSH (Adabas Caching Facility)		X			
CACTIVATE	RABN range activation (Adabas Caching Facility)			X		
CASSODSP	Associator RABNs cached for data space (Adabas Caching Facility)			X		
CASSOEXT	Associator RABNs cached for extended memory (Adabas Caching Facility)			X		
CASSOHSP	Associator RABNs cached for hiperspace (Adabas Caching Facility)			X		
CASSOV64	Associator RABNs cached for virtual 64 (Adabas Caching Facility)			X		
CASSOMAXS	Associator cache space unit size (Adabas Caching Facility)			X		

Parameter	Usage	No	LF	LM	GF	GM
CBUFNO	Read buffer count for concurrent I/O (Adabas Caching Facility)			X		
CCTIMEOUT	Cache space area inactivity time (Adabas Caching Facility)			X		
CDATADSP	Data Storage RABNs cached for data space (Adabas Caching Facility)			X		
CDATAEXT	Data Storage RABNs cached for extended memory (Adabas Caching Facility)			X		
CDATAHSP	Data Storage RABNs cached for hiperspace (Adabas Caching Facility)			X		
CDATAV64	Data Storage RABNs cached for virtual 64 (Adabas Caching Facility)			X		
CDATAMAXS	Data Storage cache space unit size (Adabas Caching Facility)			X		
CDEMAND	Lowest acceptable Adabas buffer efficiency level (Adabas Caching Facility)			X		
CDISPSTAT	RABN range statistic display location (Adabas Caching Facility)			X		
CDXnn	Collation descriptor user exit(s)				X	
CEXCLUDE	Excluded command types (Adabas Caching Facility)			X		
CFILE	File or file range to be cached (Adabas Caching Facility)			X		
<u>CLOGDEV</u>	Multiple command log device		X			
<u>CLOGLAYOUT</u>	Define command log format				X	
<u>CLOGMRG</u>	Automatic command log merge control in a cluster environment					X
<u>CLOGSIZE</u>	Multiple command log size (blocks)		X			
<u>CLUCACHENAME</u>	Cluster cache structure name (Adabas Cluster Services only)				X	
<u>CLUCACHESIZE</u>	Cluster cache area size (Adabas Parallel Services only)				X	
<u>CLUCACHETYPE</u>	Cluster cache area storage type (Adabas Parallel Services only)				X	
CLUCACHEUNCHANGED	Shared cache unchanged block control (Adabas Parallel Services only)		X			
<u>CLUGROUPNAME</u>	Cluster group name (Adabas Cluster Services only)				X	

Parameter	Usage	No	LF	LM	GF	GM
<u>CLULOCKNAME</u>	Cluster lock structure name (Adabas Cluster Services only)				X	
<u>CLULOCKSIZE</u>	Cluster lock area size (Parallel Services only)				X	
<u>CLUSTER</u>	Adabas cluster session control				X	
<u>CMAXCSPS</u>	Storage area count for ADACSH (Adabas Caching Facility)			X		
<u>CRETRY</u>	Cache space retry interval (Adabas Caching Facility)			X		
<u>CSTORAGE</u>	RABN caching activation (Adabas Caching Facility)			X		
<u>CT</u>	Command time limit (seconds)					X
<u>CWORKSTORAGE</u>	Cache space type (Adabas Caching Facility)			X		
<u>CWORK2FAC</u>	Percentage of Work part 2 cached (Adabas Caching Facility)			X		
<u>CWOFK3FAC</u>	Percentage of Work part 3 cached (Adabas Caching Facility)			X		
<u>CXFILE</u>	Excluded files (Adabas Caching Facility)			X		
<u>DATACACHE</u>	Controller caching control for the Data Storage component		X			
<u>DIRRATIO/ELEMENTRATIO</u>	Ratio of directory entries to data elements in a cluster cache structure/area				X	
<u>DBID</u>	Database ID (physical)				X	
<u>DEVICE</u>	Device type of the first ASSO extent				X	
<u>DSF</u>	Delta Save Facility control				X	
<u>DSFEX1</u>	Delta Save Facility user exit				X	
<u>DTP *</u>	Distributed transaction processing control	*			X	
<u>DUALCLD</u>	Dual command log device		X			
<u>DUALCLS</u>	Dual command log size (blocks)		X			
<u>DUALPLD</u>	Dual protection log device		X			
<u>DUALPLS</u>	Dual protection log size (blocks)		X			
<u>FASTPATH</u>	Adabas Fastpath control				X	
<u>FMXIO</u>	Limit parallel I/O operations by LFIOP flush processing			X		
<u>FORCE</u>	Overwrite IDTE		X			
<u>HEXnn</u>	Hyperdescriptor exit(s)				X	
<u>IGNDIB</u>	Ignore DIB entry		X			

Parameter	Usage	No	LF	LM	GF	GM
<u>IGNDTP</u>	Ignore distributed transaction processing area (Work part 4)		X			
<u>INTNAS</u>	Interval between nucleus statistic checkpoints (SYNS 60)				X	
<u>LBP</u>	Length of buffer pool		X			
<u>LCP</u>	Length of security pool		X			
<u>LDEUQP</u>	Length of unique (UQ) descriptor pool		X			
<u>LDTP</u>	Length of distributed transaction processing area (Work part 4)		X			
<u>LFIOP</u>	Length of asynchronous flush pool		X			
<u>LFP</u>	Length of internal format buffer pool		X			
<u>LI</u>	Length of ISN list table (TBI)		X			
<u>LOCAL</u>	Nucleus (cluster) unknown to the network				X	
<u>LOGCB</u>	Log control block			X		
<u>LOGCLEX</u>	Log command log extension (CLEX)			X		
<u>LOGFB</u>	Log format buffer			X		
<u>LOGGING</u>	Logging of Adabas commands			X		
<u>LOGIB</u>	Log ISN buffer			X		
<u>LOGIO</u>	Log I/O activity			X		
<u>LOGRB</u>	Log record buffer			X		
<u>LOGSB</u>	Log search buffer			X		
<u>LOGSIZE</u>	Maximum command log size		X			
<u>LOGUX</u>	Log user exit B data			X		
<u>LOGVB</u>	Log value buffer			X		
<u>LP</u>	Length of data protection area (Work part 1)		X			
<u>LQ</u>	Length of sequential command table		X			
<u>LRDP</u>	Length of the redo pool in cluster environments.		X			
<u>LS</u>	Length of sort area		X			
<u>LU</u>	Length of intermediate user buffer				X	
<u>LWKP2</u>	Length of ISN list processing area (Work part 2)		X			
<u>LWP</u>	Length of Adabas work pool		X			
<u>MODE</u>	Mode of operation	X				
<u>MSGBUF</u>	Size of the message buffer		X			

Parameter	Usage	No	LF	LM	GF	GM
MXCANCEL	Timeout threshold for a cancel request between cluster nuclei(Adabas Cluster Services and Adabas Parallel Services)			X		
MXCANCELWARN	Timeout threshold for a cancel request warning between cluster nuclei (Adabas Cluster Services and Adabas Parallel Services)			X		
<u>MXMSG</u>	Maximum message reply time between cluster nuclei (Adabas Cluster Services and Adabas Parallel Services)			X		
MXMSGWARN	Timeout threshold for a message reply warning between cluster nuclei (Adabas Cluster Services and Adabas Parallel Services)			X		
MXSTATUS	XCF status monitoring heartbeat interval (Adabas Cluster Services)			X		
<u>MXTNA</u>	Maximum inactivity time limit override for a user				X	
<u>MXTSX</u>	Maximum Sx execution time limit override for a user				X	
MXTT	Maximum transaction time limit override for a user				X	
MXWTOR	Self-termination query operator response interval (Adabas Cluster Services and Adabas Parallel Services)			X		
<u>NAB</u>	Number of attached buffers		X			
NC	Number of command queue elements		X			
<u>NCLOG</u>	Number of command logs		X			
NH	Number of hold queue elements		X			
<u>NISNHQ</u>	Number of ISNs in hold queue for user					X
<u>NPLOG</u>	Number of protection logs		X			
<u>NONDES</u>	Non-descriptor searches					X
<u>NQCID</u>	Number of active command IDs per user					X
<u>NSISN</u>	Number of ISNs per ISN table element		X			
NT	Number of threads		X			
NU	Number of user queue elements		X			
<u>NUCID</u>	Custer nucleus ID		X			
<u>OPENRQ</u>	Open command required				X	

Parameter	Usage	No	LF	LM	GF	GM
<u>PLOGDEV</u>	Multiple protection log device		X			
<u>PLOGRQ</u>	Protection log required				X	
<u>PLOGSIZE</u>	Multiple protection log size (blocks)		X			
<u>PREFETCH**</u>	Prefetch/multifetch feature control (see note below)	X				
<u>PREFICMD**</u>	Include command from prefetch/multifetch (see note below)	X				
<u>PREFIFIL**</u>	Include file from prefetch/multifetch (see note below)	X				
<u>PREFNREC**</u>	Multifetch record count (see note below)	X				
<u>PREFSBL**</u>	Prefetch single buffer length (see note below)	X				
<u>PREFTBL**</u>	Prefetch total buffer length (see note below)	X				
<u>PREFXCMD**</u>	Exclude command from prefetch/multifetch (see note below)	X				
<u>PREFXFIL**</u>	Exclude file from prefetch/multifetch (see note below)	X				
<u>QBLKSIZE</u>	Sequential data set block size (optimized by ADAIOR)		X			
<u>READONLY</u>	Read-only session control	X				
<u>REVIEW</u>	Adabas Review control			X		
<u>SMGT</u>	Error handling (PIN) facility control		X			
<u>SORTCACHE</u>	Controller caching control for the Adabas sort area component		X			
<u>SPT</u>	Adabas triggers and stored procedures control				X	
<u>SVC</u>	SVC number		X			
<u>TCPIP</u>	TCP/IP access control			X		
<u>TCPURL</u>	TCP/IP universal resource locator (URL)			X		
<u>TEMPCACHE</u>	Controller caching for the Adabas temp area component		X			
<u>TFLUSH</u>	Synchronous buffer flush time	X				
<u>TLSCMD</u>	Time limit for S1, S2, and S4 complex searches (seconds)				X	
<u>TNAA</u>	Non-activity time limit (access-only users)					X
<u>TNAE</u>	Non-activity time limit (ET logic users)					X
<u>TNAX</u>	Non-activity time limit (exclusive update users)					X

Parameter	Usage	No	LF	LM	GF	GM
TT	Transaction time limit					X
UEXn	User exits: 1, 3, 4, 5, 8		X			
UEXn	User exits: 2, 12				X	
UEXn	User exits: 6, 9 (for utilities)	X				
UTIONLY	Utilities-only session				X	
VISTA	Adabas Vista control				X	
WORKCACHE	Controller caching for the Adabas work area component		X			

**Notes:**

1. \* Adabas Parallel Services 8.1 does not support DTP=TM, but it does support DTP=RM.
2. \*\* The PREFxxx 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, CLUCACHEUNCHANGED, CLULOCKSIZE, DIRRATIO / ELEMENTRATIO, LRDP, and NUCID parameters are used by the Adabas Parallel Services cluster nucleus and its environment.

If protection logs 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 the Adabas operations documentation.