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

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
AOSLOG	Log to DDPRINT commands issued by AOS or ADADBS OPERCOM that modify the active nucleus			X		
AREXCLUDE	Exclude file(s) from autorestart		X			
ARMNAME	Name used to activate ARM		X			
ASSOCACHE	Controller caching control for the Associator component		X			
ASYTVS	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		
CLOGDEV	Multiple command log device		X			
CLOGLAYOUT	Define command log format		X			
CLOGMRG	Automatic command log merge control in a cluster environment					X
CLOGSIZE	Multiple command log size (blocks)		X			
CLUCACHENAME	Cluster cache structure name (Adabas Cluster Services only)				X	
CLUCACHESIZE	Cluster cache area size (Adabas Parallel Services only)				X	
CLUCACHEUNCHANGED	Shared cache unchanged block control (Adabas Parallel Services only)		X			
CLUGROUPNAME	Cluster group name (Adabas Cluster Services only)				X	
CLULOCKNAME	Cluster lock structure name (Adabas Cluster Services only)				X	
CLULOCKSIZE	Cluster lock area size (Parallel Services only)				X	

Parameter	Usage	No	LF	LM	GF	GM
CLUSTER	Adabas cluster session control				X	
CMAXCSPS	Storage area count for ADACSH (Adabas Caching Facility)			X		
CRETRY	Cache space retry interval (Adabas Caching Facility)			X		
CSTORAGE	RABN caching activation (Adabas Caching Facility)			X		
CT	Command time limit (seconds)					X
CWORKSTORAGE	Cache space type (Adabas Caching Facility)			X		
CWORK2FAC	Percentage of Work part 2 cached (Adabas Caching Facility)			X		
CWOFK3FAC	Percentage of Work part 3 cached (Adabas Caching Facility)			X		
CXFILE	Excluded files (Adabas Caching Facility)			X		
DATACACHE	Controller caching control for the Data Storage component		X			
DIRRATIO/ELEMENTRATIO	Ratio of directory entries to data elements in a cluster cache structure/area				X	
DBID	Database ID (physical)				X	
DEVICE	Device type of the first ASSO extent				X	
DSF	Delta Save Facility control				X	
DSFEX1	Delta Save Facility user exit				X	
DTP *	Distributed transaction processing control	*			X	
DUALCLD	Dual command log device		X			
DUALCLS	Dual command log size (blocks)		X			
DUALPLD	Dual protection log device		X			
DUALPLS	Dual protection log size (blocks)		X			
FASTPATH	Adabas Fastpath control				X	
FMXIO	Limit parallel I/O operations by LFIOP flush processing			X		
FORCE	Overwrite IDTE		X			
HEXnn	Hyperdescriptor exit(s)				X	
IGNDIB	Ignore DIB entry		X			
IGNDTP	Ignore distributed transaction processing area (Work part 4)		X			

Parameter	Usage	No	LF	LM	GF	GM
INTNAS	Interval between nucleus statistic checkpoints (SYNS 60)				X	
LBP	Length of buffer pool		X			
LCP	Length of security pool		X			
LDEUQP	Length of unique (UQ) descriptor pool		X			
LDTP	Length of distributed transaction processing area (Work part 4)		X			
LFIOP	Length of asynchronous flush pool		X			
LFP	Length of internal format buffer pool		X			
LI	Length of ISN list table (TBI)		X			
LOCAL	Nucleus (cluster) unknown to the network				X	
LOGCB	Log control block			X		
LOGCLEX	Log command log extension (CLEX)			X		
LOGFB	Log format buffer			X		
LOGGING	Logging of Adabas commands			X		
LOGIB	Log ISN buffer			X		
LOGIO	Log I/O activity			X		
LOGRB	Log record buffer			X		
LOGSB	Log search buffer			X		
LOGSIZE	Maximum command log size		X			
LOGUX	Log user exit B data			X		
LOGVB	Log value buffer			X		
LP	Length of data protection area (Work part 1)		X			
LQ	Length of sequential command table		X			
LRDP	Length of the redo pool in cluster environments.		X			
LS	Length of sort area		X			
LU	Length of intermediate user buffer				X	
LWKP2	Length of ISN list processing area (Work part 2)		X			
LWP	Length of Adabas work pool		X			
MODE	Mode of operation	X				
MSGBUF	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		
MXMSG	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		
MXTNA	Maximum inactivity time limit override for a user				X	
MXTSX	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		
NAB	Number of attached buffers		X			
NC	Number of command queue elements		X			
NCLOG	Number of command logs		X			
NH	Number of hold queue elements		X			
NISNHQ	Number of ISNs in hold queue for user					X
NPLOG	Number of protection logs		X			
NONDES	Non-descriptor searches					X
NQCID	Number of active command IDs per user					X
NSISN	Number of ISNs per ISN table element		X			
NT	Number of threads		X			
NU	Number of user queue elements		X			
NUCID	Custer nucleus ID		X			
OPENRQ	Open command required				X	

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