Adabas Parallel Services Release Notes

This document describes the enhancements and changes provided in Adabas Parallel Services version 8.1.3. Adabas Parallel Services is the multi-update-nuclei implementation of an earlier product, Adabas Support for Multiprocessing (ADASMP).

Error messages, ADARUN parameters associated with the Adabas nucleus, and utility functions used with Adabas Parallel Services are documented in the base Adabas version 8.1.3 documentation. Parameters associated with the ADACOM program are documented in section *ADACOM Initialization Parameters*.

See the section *Utility Processing* for pointers to relevant information in the Adabas Utilities documentation.

This document is organized as follows:

- Enhancements

- Required Environment

- Adabas Add-on Product Support

- Restricted Support for Adabas Features

- Migrating from Adabas Parallel Services 7.5.1

- End-of-Support Dates

- Zap Information

- Documentation

Enhancements

This section provides information on enhancements made to Adabas Parallel Services for this release.

The document covers the following topics:

- Support for Adabas 8.1

- Alert Enhancements

- New ADARUN Parameters

- New and Changed Operator Commands

- New Structure Size Calculators

- Serialization Scope Reduction

- Cache Space Usage Improvements

- z/OS Common Storage (CSA) Key Handling

- Support for Distributed Transactions

- z/OS Version 1.9 Large Page Support

Support for Adabas 8.1

Adabas Parallel Services 8.1.3 has been enhanced to support Adabas 8.1.3. This release of Adabas Parallel Services requires Adabas 8.1.3. Adabas 8 includes enhancements that lift many of the limits imposed by prior releases of Adabas. This includes support for increased limits for the number of database and file extents and the number of MU and PE field occurrences, as well as support for spanned records and large objects (LOBs).

The Adabas router (SVC) provided with Adabas 8.1.3 supports clusters running Adabas Parallel Services 8.1.3 as well as clusters running Adabas Parallel Services 7.5.1. In addition, please note that there are no intermediate releases of Adabas Parallel Services between Version 7.5.1 and 8.1.3.

All Adabas nuclei in the same cluster must run with the same version, release, and modification levels of Adabas and of Adabas Parallel Services. For example, if one nucleus in a cluster runs with Adabas Parallel Services 8.1.3 and Adabas 8.1.3, the other nuclei in the cluster must also run with Adabas Parallel Services 8.1.3 and Adabas 8.1.3; they cannot run with different versions.

The following table identifies the Software AG cluster products and the Adabas product combinations with which they are compatible:

Software AG Cluster Product		Compatible Adabas	
Name	**Library Version**	**Library Version**	**SVC Version**
Adabas Parallel Services	8.1.3	8.1.3	8.1.3
	7.5.1	8.1.2	8.1.*x*
		7.4.*x*	8.1*x* 7.4.*x*-LX01

Alert Enhancements

This version of Adabas Parallel Services includes alert and timeout enhancements designed to help you prevent or handle critical situations where system problems might cause the prolonged unavailability of one cluster member, thus endangering the ability of the cluster member (or in severe cases, the entire cluster) to provide service. These enhancements include:

- A cancel alert that generates an operator message can be invoked when a cluster member is unresponsive to an intracluster command for a specified period of time. If the cluster member does not respond before the message times out, it is canceled.

- Self-termination alerts that generate operator messages can be invoked when a canceled cluster member does not terminate as requested (in a specified period of time) and the other cluster members prepare to self-terminate.

- An operator query that prints an operator console message and requests a response from the operator. This can be invoked by cluster members that are preparing to self-terminate because a canceled peer member remains active.

- Enhanced messaging statistics provide information about the performance of message transmission events. These statistics can be used to determine the impact of messaging on system performance and to determine how to set the ADARUN parameters related to the alert and timeout enhancements.

For more information about these alerts, read *Using Alert and Timeout Settings*.

New ADARUN Parameters

The following new ADARUN parameters were introduced for this release of Adabas Parallel Services:

- CLUCACHEUNCHANGED

- MXCANCELWARN

- MXMSGWARN

- MXWTOR

With the exception of the CLUCACHEUNCHANGED parameter, all of these parameters are local and modifiable. That is, they can be set differently for each nucleus in the cluster (local) and they can be modified in one cluster nucleus while it is running using corresponding operator commands. The CLUCACHEUNCHANGED parameter is local, but fixed; in other words, its setting cannot be dynamically changed using operator commands.

For complete information about these ADARUN parameters, read *Useful ADARUN Parameters*.

New and Changed Operator Commands

The output produced by the following operator commands was enhanced for this release of Adabas Parallel Services:

- DPARM

- DMEMTB

The following new operator commands were introduced for this release of Adabas Parallel Services:

- DXMSG

- MXCANCEL

- MXCANCELWARN

- MXMSG

- MXMSGWARN

- MXWTOR

Note:
At this time, these new commands can be issued only from the operator console. Support using the ADADBS OPERCOM function or the Adabas Online System (AOS) is not yet provided.

For complete information about these operator commands, read *Adabas Cluster Nucleus Operator Commands*.

New Structure Size Calculators

A new set of Adabas Online System (AOS) functions is provided in this release to help you calculate appropriate sizes for cache and lock structures in the coupling facility:

- The cache structure calculator helps you estimate an adequate cache structure size and related ADARUN DIRRATIO and ELEMENTRATIO parameters in a cluster environment. The cache structure must be large enough to provide sufficient space tor tracking all blocks kept in the buffer pools of all connected cluster nuclei (directory elements) and for keeping all changed blocks until they are written to the database (data elements). For more information, read *Estimating Sizes for the Cache Structure in a Cluster Environment*.

- The lock structure calculator helps you estimate an adequate lock structure size in a cluster environment. The lock structure must be large enough to provide sufficient space for keeping the lock record elements for all locks held at the same time and to avoid too much false contention between locks on different resources. For more information, read *Estimating Sizes for the Lock Structure in a Cluster Environment*.

Serialization Scope Reduction

Wherever possible in this release, the scope of the system- or sysplex-wide serialization (ENQ operations with SCOPE= SYSTEM or SYSTEMS) has been reduced to the smallest possible level that accurately reflects the sources to be protected. This is done to ensure that only the databases and servers that work on the same resources at the same time are impacted by serialization operations.

Cache Space Usage Improvements

Two enhancements to improve how Adabas Parallel Services uses large cache spaces are introduced with this release.

- Adabas Parallel Services now allows sharing of unchanged database blocks in the global cache. This functionality is controlled by the new ADARUN CLUCACHEUNCHANGED parameter. In past releases, only blocks that were changed earlier in a cluster session could be shared. This enhancement to share unchanged database blocks will result in higher cache hit rates and an overall improvement in performance when a large shared cache space is used.

- If a cache space is defined with the ADARUN CLUCACHETYPE parameter set to V64, control blocks are used by the cache manager to maintain and track the database blocks in use by cluster members. With this release of Adabas Parallel Services, these control blocks are moved to shared 64-bit storage and the dataspace that was used in past releases to store these blocks is no longer needed. This enhancement provides for the exploitation of much larger caches than in prior releases.

z/OS Common Storage (CSA) Key Handling

With z/OS version 1.9, the default setting of the ALLOWUSERKEYCSA parameter has been changed to NO, prohibiting the allocation of CSA storage in a non-privileged storage key. In past releases of Adabas Parallel Services, its data structures in common storage (PLXCB and subordinate control blocks) were stored in user key storage. Due to the change of the ALLOWUSERKEYCSA default, you must either:

- Change the ALLOWUSERKEYCSA setting in z/OS 1.9 to YES. In this case, you need do nothing more, but you incur the security risk that unauthorized programs might modify storage owned by Adabas Parallel Services.

- Accept the ALLOWUSERKEYCSA default setting in z/OS 1.9 (NO), thus eliminating the security risk. If you choose this option, however, you will need to modify your Adabas Parallel Services installation and the Adabas Parallel Services and ADACOM startup procedures to use a system key. For information on modifying the Adabas Parallel Services startup procedure to use a system key and on the prerequisites for doing so, read *Modifying the z/OS Common Storage (CSA) Key*.

Support for Distributed Transactions

Adabas Parallel Services 8.1.3 now fully supports distributed transactions (in other words, ADARUN parameter setting DTP=RM), when run in conjunction with Adabas Transaction Manager 8.1 (or Adabas Transaction Manager 7.5 plus appropriate fixes for Adabas 8.1 support).

z/OS Version 1.9 Large Page Support

Once you have applied zap AN813070, this release of Adabas Parallel Services will support the use of large pages (1 MB pages versus 4K pages) on IBM z10 mainframes running z/OS Version 1.9 or above, if large page support has been enabled there. To use large pages in Adabas Parallel Services, specify the value of "L64" in the CLUCACHETYPE ADARUN parameter. For more information, read *CLUCACHETYPE: Global Cache Area Storage Type Option*

Note:
Virtual 64-bit storage backed by large pages can only be used on IBM z10 mainframes running z/OS Version 1.9 or above and for which IBM large page support has been enabled via IBM APAR OA20902. You must also allocate the size of the large page pool (use the LFAREA parameter in the IEASYS*xx* member of SYS1.PARMLIB). The LFAREA parameter allows you to specify the amount of real storage to be used for large pages; this parameter cannot be changed dynamically and, if it is not set, page frames will remain allocated at a size of 4K.

Required Environment

This part of the documentation describes the environment settings required for running Adabas Parallel Services 8.1.3. The required environment is essentially the same as the one for Adabas Parallel Services 7.5.1.

The section covers the following topics:

- Operating System Environment

● Software AG Product Environment

Operating System Environment

Before attempting to install Adabas Parallel Services, ensure that the host operating system is at the minimum required level. Complete information on the platforms supported by Software AG and Adabas Parallel Services is provided at this link:
http://www.softwareag.com/Corporate/products/prodavail/default.asp.

Adabas Parallel Services version 8.1.3 requires:

● z/OS and z/OS.e: All versions currently supported by IBM. Support for z/OS.e is restricted to client programs executing in batch, or under TSO or Com-plete.

   Note:
   Virtual 64-bit storage backed by large pages can only be used on IBM z10 mainframes running z/OS Version 1.9 or above and for which IBM large page support has been enabled via IBM APAR OA20902. You must also allocate the size of the large page pool (use the LFAREA parameter in the IEASYS*xx* member of SYS1.PARMLIB). The LFAREA parameter allows you to specify the amount of real storage to be used for large pages; this parameter cannot be changed dynamically and, if it is not set, page frames will remain allocated at a size of 4K. Adabas Parallel Services 8.1.3 supports large pages once you have applied zap AN813070.

● z/VSE: All versions currently supported by IBM.

Software AG provides support for the operating system versions supported by their respective manufacturers. Generally, when an operating system provider stops supporting a version of an operating system, Software AG will stop supporting that operating system version.

Although it may be technically possible to run a new version of Adabas Parallel Services on an old operating system, Software AG cannot continue to support operating system versions that are no longer supported by the system's provider.

If you have questions about support, or if you plan to install Adabas Parallel Services on a release, version, or type of operating system other than those included at the link above, consult Software AG technical support to determine whether support is possible, and under what circumstances.

Software AG Product Environment

Adabas Parallel Services version 8.1.3 requires Adabas version 8.1.3. This delivery includes required Adabas zaps that existed when Adabas Parallel Services 8.1.3 was released. Please check ServLine24 for additional cluster-related Adabas zaps when installing Adabas Parallel Services.

If you install Adabas Online System (AOS), either the demo version delivered with Adabas 8.1.3 or the version 8.1.3 selectable unit is required. AOS is compiled under Natural version 3.1 and runs on that and all subsequent versions of Natural.

Adabas Add-on Product Support

Adabas Parallel Services version 8.1.3 supports add-on products as follows:

Adabas Product	Compatible Version Level
Adabas Caching Facility (ACF)	8.1
Adabas Delta Save (ADE)	8.1
Adabas Fastpath (AFP)	8.1 (or version 7.4 with appropriate fixes applied)
Adabas Manager (AMA)	Support is planned in a future version
Adabas Online System (AOS)	8.1
Adabas Review (REV)	4.4
Adabas SAF Security (AAF)	8.1 (or version 7.4 with appropriate fixes applied)
Adabas Statistics Facility (ASF)	No support is provided at this time.
Adabas Transaction Manager (ATM)	8.1 (or version 7.5 with appropriate fixes applied)
Adabas Vista (AVI)	8.1 (or version 7.4 with appropriate fixes applied)
Event Replicator for Adabas (ARK)	3.1

Restricted Support for Adabas Features

This section describes facilities internal to Adabas that are not supported for cluster nuclei running under this Adabas Parallel Services version. The facilities are supported normally for noncluster nuclei; however, no Adabas Parallel Services functionality is available to them.

For an Adabas cluster nucleus, the following features are not available and cannot be specified:

- MODE=SINGLE

- sequential protection log (DDSIBA)

- synchronous buffer flush (LFIOP=0)

The following features are not currently supported for a cluster nucleus under this Adabas Parallel Services version, but may be supported in subsequent versions of the product:

- READONLY=YES (receives PARM ERROR 71 if attempted).

- UTIONLY=YES can be specified for a cluster nucleus; if you start cluster nuclei with conflicting settings of UTIONLY, the system will change them to conform to the setting of the first active nucleus. Currently, however, the UTIONLY setting cannot be changed using an ADADBS OPERCOM or Adabas Online System function. Once the cluster is started, the only way to change the UTIONLY setting is to bring down the whole cluster and restart it with a different setting.

- advance file lock (ALOCKF).

- online reorder.

Enhanced error recovery is supported; however, option changes are effective only for the local nucleus.

TCP/IP direct links are supported; however, the IP address/port is tied to an individual nucleus.

Migrating from Adabas Parallel Services 7.5.1

▶ **To migrate from Adabas Parallel Services 7.5.1 to Adabas Parallel Services 8.1.3, complete the following steps:**

1. Shut down the whole cluster. Run the Adabas ADARES PLCOPY or ADASAV SAVE utility operations as necessary for your installation. For more information on these utility functions, refer to your Adabas documentation.

2. Replace the load library in your existing installation with the library supplied by Software AG containing Adabas 8.1.3 (ADA813) and Adabas Parallel Services 8.1.3 (ASM813) data sets. Then apply the zaps delivered with Adabas Parallel Services 8.1.3 and any Adabas Parallel Services zaps and pertinent Adabas zaps downloaded from ServLine24.

3. Install the Adabas 8.1.3 SVC if you have not already done so.

4. If your database was running with Adabas 7.4 (ADA74*x*), run the ADACNV utility to convert it to Adabas 8.1 format. For more information about using the ADACNV utility, refer to your Adabas 8 documentation (available at *http://documentation.softwareag.com/adabas/default.htm*).

5. Restart the cluster.

End-of-Support Dates

For information on how long a product is supported by Software AG, access Software AG's ServLine24 web site at *http://servline24.softwareag.com/public/.* In the left menu of this web page, expand My ServLine24 and log into Secured Services. Once you have logged in, you can expand **Products** in the left menu of the web page and select **Product Roadmaps** to access the Product Version Roadmaps application. This application allows you to request support information for specific products and releases.

Zap Information

This section covers the following topics related to zaps and your use of Adabas Parallel Services:

- Adabas Zaps on ServLine 24

- Applying Zaps to Adabas Parallel Services Components

- Applying Zaps in VSE Environments

Adabas Zaps on ServLine 24

Please be sure to check Software AG's ServLine24 for any cluster-related Adabas 8.1.3 zaps when you install Adabas Parallel Services. The complete Adabas 8.1.3 zaps may not be supplied with your Adabas Parallel Services product.

Applying Zaps to Adabas Parallel Services Components

Usually, zaps for Adabas Parallel Services nuclei can be applied and made active one nucleus at a time. That is, individual nuclei can be shut down, have the zap applied, and be brought up again without ever shutting down the entire cluster. This is the default method of applying zaps, which is in effect if the zap description does not explicitly state otherwise.

In some cases, it may be possible that applying and activating a zap one component at a time would introduce erroneous behavior in the components that have not yet been zapped. If this is the case for a zap, it will be clearly indicated in the zap description, and instructions will be given for how to apply and activate the zap properly.

Zaps to the SVCCLU component of the Adabas router (Adabas SVC), as well as the ADACOM task/job, always require the shutdown of the entire cluster before they cay be activated, since every Parallel Services cluster works with only one router (SVC) and one ADACOM, and since both must stay active as long as the cluster is active.

Applying Zaps in VSE Environments

When applying Adabas Parallel Services zaps in VSE environments, the user PROC must include the Adabas library as well as the Adabas Parallel Services library in the OBJ search chain.

Documentation

The documentation for this product is new with this release. When additional updated versions of the documentation are created, you can review them by linking to the Software AG documentation web site: *http://documentation.softwareag.com/*. If you have a Servline24 account, updated and past versions of the documentation can also be reviewed and downloaded by linking to the Software AG Servline24 web site: *http://servline24.softwareag.com/public/*. If you do not have a ServLine24 user ID and password yet, you will find instructions for registering on this site (free for customers with maintenance contracts).

The Adabas Parallel Services documentation includes:

- online HTML topics describing all aspects of the product;

- Adobe Acrobat Reader Portable Document Format (PDF) files created from the HTML topics;

- Adobe Acrobat Reader Portable Document Format (PDF) files for a series of manuals created from the HTML topics.

No hard-copy documentation is provided, but you can print the PDF and HTML files on your local printer.

Viewing Software AG Product Documentation under Windows XP SP2

With Service Pack 2 (SP2) for Windows XP and Service Pack 1 (SP1) for Server 2003, Microsoft introduced a range of powerful new security features that restrict active content that runs locally on your computer. Active content includes ActiveX controls, Java applets, and JavaScript. Software AG's documentation web pages contain some JavaScript, and the SEARCH, INDEX and CONTENTS capabilities are implemented as Java applets. As a result, when viewing documentation web pages that reside on your PC using Internet Explorer and Mozilla Firefox under Windows XP SP2, note that active content is blocked. You must explicitly and repeatedly allow active content if you want to make use of the documentation's full navigation features. Note that this behavior is only observed when reading web pages installed locally on your PC, including those on CD in the PCs CD-ROM drive.

The active content for which Software AG is responsible, that is, the JavaScript code in our HTML documentation pages, will not harm your computers. The risk in using the navigation applets is negligible: Software AG has received no reports from users concerning any harm caused to a computer by the applets. We therefore suggest that when reading Software AG documentation in a local context, you should allow active content via the Security settings in the browser (with Internet Explorer, usually found under Tools > Internet Options > Advanced).

Full details of alternatives can be found on the home page of the suppliers of the navigation applets: *http://www.phdcc.com/xpsp2.htm*.