

# Adabas Parallel Services

## Release Notes

Version 8.4.1

April 2018

This document applies to Adabas Parallel Services Version 8.4.1 and all subsequent releases.

Specifications contained herein are subject to change and these changes will be reported in subsequent release notes or new editions.

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# 1 Release Notes

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This document describes the enhancements and changes provided in Adabas Parallel Services version 8.4.

<i>Enhancements</i>	Describes the new and changed features in Adabas Parallel Services 8.4.
<i>Adabas Product Support</i>	Describes Adabas Parallel Services support of Adabas add-ons and other Adabas products.
<i>Restricted Support for Adabas Features</i>	Describes any restrictions on Adabas Parallel Services support of Adabas features.
<i>Migrating from Prior Versions</i>	Describes how to migrate from prior versions of Adabas Parallel Services.
<i>Zap Information</i>	Describes information about Adabas Parallel Services zaps.
<i>End of Maintenance</i>	Describes how you can determine the end-of-support dates for your Software AG products.
<i>Documentation and Other Online Information</i>	Describes the documentation and other online information you can obtain about this release of Adabas Parallel Services.

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# 2 Enhancements

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This chapter describes the Adabas Parallel Services 8.4 enhancements.

Category	Enhancements
Adabas Parallel Services 8.4 SP1 Enhancements	<i>PLXCB Structures in Dataspace</i>
	<i>Collaboration Between Cluster Nuclei</i>
	<i>ADARUN Parameter Enhancements</i>
	<i>Operator Command Enhancements</i>
	<i>Utility Enhancements</i>
	<i>ADASMF Enhancements</i>

## PLXCB Structures in Dataspace

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For z/OS users, Adabas Parallel Services Version 8.4 introduces the ability to place the PLXCB structures in a dataspace, in order to provide relief from 31-bit ECSA storage constraints. The PLXCB structures maintain information about the active nuclei and users of a cluster database, which is used to route the commands of the users to their assigned nuclei in the cluster. If several different cluster databases have nuclei or users running on the same system, placing their PLXCB structures in dataspace may substantially reduce the use of common storage (ECSA), if the configured maximum number of users (NU parameter) is large. To place the PLXCB structures for a cluster database in a dataspace, specify the new parameter LOC=DSP in the ADACOM initialization task for that database. For more information, read *PLXCB Structures* and *LOC - Specify PLXCB Location*.

## Collaboration Between Cluster Nuclei

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Two enhancements in Adabas Parallel Services Version 8.4 make the Adabas nuclei in a cluster more independent of one another, by reducing the need for nuclei to collaborate in cluster-wide internal processes. This takes away two classes of scenarios where a temporarily unresponsive nucleus may impact the processing of the other nuclei in the cluster.

For more information about these enhancements than that given here, read *Collaboration Between Cluster Nuclei* in the Adabas Parallel Services *Operations*.



## Buffer Flush Independence

The new ADARUN parameters CLUPUBLPROT and CLUWORK1CACHE may be used to configure the publishing of protection data within the cluster. This influences the way buffer flushes react if one nucleus in the cluster is slow or unable to respond when asked by a buffer flush to write its latest protection data to the WORK data set.

The publishing policy previously used by Adabas is set by CLUPUBLPROT=NO. This is the default value. With this setting, cluster nuclei do not publish their protection data within the cluster (i.e., make it available to the other nuclei) before they write related updated ASSO or DATA blocks to the cache. Instead, when a buffer flush is about to write updated blocks out to the database, all nuclei in the cluster must collaborate with the buffer flush and write their latest protection data to their WORK data sets.

A new publishing policy may be specified by setting CLUPUBLPROT=YES. With this setting, the nuclei publish their protection data in the global cache or on their WORK data sets before they write related updated ASSO or DATA blocks to the cache. In return, a buffer flush can proceed even if a nucleus is slow or unable to respond to a request to write its latest protection data to WORK. In this case, the buffer flush reads the latest protection data of the unresponsive nucleus from the cache and writes it to WORK by itself.

The new CLUWORK1CACHE parameter configures how many WORK blocks a cluster nucleus may keep in the global cache at the same time, if CLUPUBLPROT is set to YES. CLUWORK1CACHE implicitly regulates the use of cache writes versus WORK I/Os for the publishing of protection data and is performance-sensitive for update-intensive workloads.

Setting CLUPUBLPROT=YES makes the nuclei in a cluster more independent of one another by allowing any nucleus to perform a buffer flush without the collaboration of all of its peer nuclei.

For more information about these parameters, read *CLUPUBLPROT Parameter: Publishing of Protection Data* and *CLUWORK1CACHE Parameter: Number of WORK Blocks in Global Cache*.

## Update Command Synchronization

The new ADARUN parameter UPDATECONTROL may be used to set the scheduling policy for update commands at the end of buffer flushes.

This parameter is available for both cluster and non-cluster nuclei. It is introduced in the Release Notes for Adabas Version 8.4.

Setting UPDATECONTROL=NODELAY makes the nuclei in a cluster more independent of one another, by not forcing the runout of all update commands (update command synchronization) after every buffer flush. These synchronization processes require the collaboration of all nuclei in the cluster.

For more information about the UPDATECONTROL parameter, read *UPDATECONTROL Parameter: Control Scheduling of Update Commands During Buffer Flush* in the *AdabasOperations*.

## ADARUN Parameter Enhancements

Adabas Parallel Services Version 8.4 introduces two new ADARUN parameters: CLUPUBLPROT and CLUWORK1CACHE. Both are related to the *Buffer Flush Independence* enhancement described above under *Collaboration Between Cluster Nuclei*. See that section for more information.

## Operator Command Enhancements

Adabas Parallel Services Version 8.4 introduces or enhances the following operator commands:

Command	New or Changed	Enhancement Description
CLUPUBLPROT=YES NO	New	This new command dynamically modifies the setting of the ADARUN CLUPUBLPROT parameter.
DPARM	Changed	In cluster nuclei, the parameters listed include the new CLUPUBLPROT and CLUWORK1CACHE parameters.
DRES	Changed	In cluster nuclei, the resources listed include the new protection data area extension on the WORK dataset ("Work Pt 1b"). This is also shown in the Adabas session end statistics.
DSTAT	Changed	In cluster nuclei, the statistics include the extra WORK I/Os for publishing protection data and the timeouts of buffer flush-related V2 commands, if at least one of these numbers is nonzero or CLUPUBLPROT is set to YES. This is also shown in the Adabas session end statistics.
DXCACHE	Changed	This includes the cache I/Os for WORK blocks, if at least one of the related numbers is nonzero. This is also shown in the Adabas session end statistics.
DXSTAT	Changed	This includes the cache I/Os for WORK blocks, if at least one of the related numbers is nonzero, and it also includes the report by the new DXWORK command.
DXWORK	New	This new command displays the I/O statistics for the WORK datasets of all nuclei in the cluster. See <i>WORK Data Set I/O Statistics</i> for more information about these statistics. This is also shown in the Adabas session end statistics.

## Utility Enhancements

Adabas Parallel Services Version 8.4 introduces or enhances the following ADADBS OPERCOM functions:

Utility Function	New or Changed	Enhancement Description
ADADBS OPERCOM CLUPUBLPROT=YES NO	New	This new function dynamically modifies the setting of the ADARUN CLUPUBLPROT parameter.
ADADBS OPERCOM DPARM	Changed	For cluster nuclei, the parameters listed include the new CLUPUBLPROT and CLUWORK1CACHE parameters.
ADADBS OPERCOM DRES	Changed	For cluster nuclei, the resources listed include the new protection data area extension on the WORK dataset ("Work Prt1b").
ADADBS OPERCOM DSTAT	Changed	For cluster nuclei, the statistics include the extra WORK I/Os for publishing protection data and the timeouts of buffer flush-related V2 commands, if at least one of these numbers is nonzero or CLUPUBLPROT is set to YES.
ADADBS OPERCOM DXCACHE	Changed	This includes the cache I/Os for WORK blocks, if at least one of the related numbers is nonzero.
ADADBS OPERCOM DXSTAT	Changed	This includes the cache I/Os for WORK blocks, if at least one of the related numbers is nonzero, and it also includes the report by the new DXWORK function.
ADADBS OPERCOM DXWORK	New	This new function displays the I/O statistics for the WORK datasets of all nuclei in the cluster. See <i>WORK Data Set I/O Statistics</i> for more information about these statistics. This is also shown in the Adabas session end statistics.

These functions are also available via the Adabas Online System (AOS).

Furthermore, for each WORK dataset in a cluster, the ADAWRK utility prints information from the protection data area extension as part of its summary report.

## ADASMF Enhancements

Adabas Parallel Services 8.4 adds the following information to the SMF records created by cluster nuclei, if ADARUN parameter SMF=YES:

- If SMFDETAIL includes 'CSHB', the cache statistics include those for block type 'WORK'.
- If SMFDETAIL includes 'PARM', the parameter settings include those for the new CLUPUBLPROT and CLUWORK1CACHE parameters.

- If SMFDETAIL includes 'IODE', the I/O statistics include those for other WORK datasets in a cluster. The DD names have prefix 'ADW'.
- If SMFDETAIL includes 'SESS', the session statistics include the blocks, I/Os and waits for the extra publishing of protection data on WORK Part 1 induced by CLUPUBLPROT=YES, as well as the buffer flush V2 timeouts.

# 3 Adabas Product Support

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In general, Adabas Parallel Services Version 8.4 supports or is supported by the same add-on products as Adabas 8.4. The following table describes Adabas 8 compatibility with other Adabas products, including prior releases of Adabas itself. You may need to upgrade your installation of the software if your existing release is not listed.

Product	Compatible Version Levels and Notes
Adabas (ADA)	<p>The version of the Adabas SVC or router (BS2000) used must be the same as or greater than the version of any Adabas database used in your Adabas environment. For example, the Adabas 8.4 SVC/router can be run in the same environment with Adabas 8.2, 8.3, or 8.4 databases. However, an Adabas 8.4 database cannot run in the same environment with an Adabas 8.3 SVC/router.</p> <p>For any given database (on disk), the Adabas nucleus and utilities of the same version and release level as the database must be used. If you need to convert a database to a higher version or release level, or revert it to a lower version or release level, the ADACNV utility of the higher level must be used.</p> <p>The Adabas link (ADALNK) routines can be used across versions. For example, Adabas 8.4 link routines can be used to issue calls to Adabas 8.3 databases. Software AG recommends that you use the Adabas 8 link routines for all programs that issue Adabas direct calls.</p>
Adabas Bridge for DL/I (ADL)	Version 2.3 SP2 supports Adabas 8.
Adabas Bridge for VSAM (AVB)	Version 5.1 SP1 releases support Adabas 8.4 databases that do not make use of the expanded features (for example, spanned records, increased limits, or large object fields) available since Adabas 8.3.
Adabas Caching Facility (ACF)	Version 8.4 supports Adabas 8.4 databases and requires the Adabas 8.4 load library, with appropriate Adabas 8.4 zaps applied.
Adabas CICS Interface (ACI)	Version 8.4 supports Adabas 8.4 databases, with appropriate Adabas 8.4 zaps applied.

Product	Compatible Version Levels and Notes
Adabas Cluster Services (ALS)	Version 8.4 supports Adabas 8.4 databases and requires the Adabas 8.4 load library, with appropriate Adabas 8.4 zaps applied.
Adabas Delta Save Facility (ADE)	Version 8.4 supports Adabas 8.4 databases and requires the Adabas 8.4 load library, with appropriate Adabas 8.4 zaps applied.
Adabas Fastpath (AFP)	The minimum supported level of Adabas Fastpath is version 8.2 SP2. For more information, refer to <i>Using 8.2 COR-based Add-ons</i> , in the <i>Adabas Release Notes</i> .
Adabas IMS Interface (AII)	Version 8.4 supports Adabas 8.4 databases, with appropriate Adabas 8.4 zaps applied.
Adabas Native SQL (SQL)	Version 2.4 SP1 supports Adabas 8 databases that do not make use of the expanded features (for example, spanned records, increased limits, or large object fields) available in Adabas 8.
Adabas Online System (AOS)	Version 8.4 supports Adabas 8.4 databases, with appropriate Adabas 8.4 zaps applied.
Adabas Parallel Services (ASM)	Version 8.4 supports Adabas 8.4 databases and requires the Adabas 8.4 load library, with appropriate Adabas 8.4 zaps applied.
Adabas Review (REV)	Version 4.8 SP2 and above support Adabas 8.4. For more information, refer to your <i>Adabas Review</i> documentation.
Adabas SAF Security z/OS (AAF)	The minimum supported level of Adabas SAF Security is version 8.2 SP2. For more information, refer to <i>Using 8.2 COR-based Add-ons</i> , in the <i>Adabas Release Notes</i> .
Adabas Statistics Facility (ASF)	Version 8 fully supports all Adabas 8 databases and expanded features.
Adabas SQL Gateway (ACE)	All currently supported versions of ACE support Adabas 8 databases. Please check the individual release notes for further information on which databases features are supported
Adabas System Coordinator (COR)	The minimum supported level of Adabas System Coordinator is version 8.2 SP2. For more information, refer to <i>Using 8.2 COR-based Add-ons</i> , in the <i>Adabas Release Notes</i> .
Adabas Text Retrieval (TRS)	<p>Version 2.1 SP4 works with Adabas 8.4 SP1 when the Adabas Text Retrieval 2.1 SP4 hyperdescriptor exit TRSHEx12 is enabled to run with the Version 8 interface by applying zaps TR21454 and TR21455. This hyperdescriptor exit will then only operate with Adabas Version 8. If you then want to run Adabas Text Retrieval 2.1 SP4 with an older Adabas version, you must either undo the zaps or use a copy of the hyperdescriptor exit where zaps TR21454 and TR21455 are not applied. If you do use TR21454 and TR21455, the following additional Adabas Text Retrieval fixes must be applied as prerequisite zaps: TR21420, TR21421, TR21422, TR21423 and TR21424. These zaps can be found in Empower.</p> <p>It is not necessary to use the Adabas Hyperdescriptor Exit Stub in conjunction with Adabas Text Retrieval.</p>

Product	Compatible Version Levels and Notes
Adabas Transaction Manager (ATM)	The minimum supported level of Adabas Transaction Manager is version 8.2 SP2. For more information, refer to <i>Using 8.2 COR-based Add-ons</i> , in the <i>Adabas Release Notes</i> .
Adabas Vista (AVI)	The minimum supported level of Adabas Vista is version 8.2 SP2. For more information, refer to <i>Using 8.2 COR-based Add-ons</i> , in the <i>Adabas Release Notes</i> .
Data Archiving for Adabas (ADR)	Data Archiving for Adabas is compatible with all supported versions of Adabas in z/OS environments.
Entire Net-Work (WCP)	Version 6.3 and above fully support Adabas 8 databases and expanded features, as well as ACBX interface direct calls.
Entire System Server (NPR)	Entire System Server Version 3.5 and later versions fully support Adabas 8 databases and expanded features.
Event Replicator for Adabas (ARK)	Version 3.5 SP4 and above support Adabas 8.4, as does version 3.5 SP3 with additional library L003. For more information, refer to your Event Replicator for Adabas documentation.
Natural (NAT)	Version 8.2 SP4 fully supports Adabas 8.4 databases and expanded features.
Predict (PRD)	Version 8.3 SP1 fully supports Adabas 8.4 databases and expanded features.
EntireX/webMethods EntireX (EXX)	<p>All currently supported versions of EntireX support Adabas 8 databases. Please check the individual release notes for further information.</p> <p><b>Note:</b> In order to work with the Adabas 8.4 SVC, certain EntireX fixes must be applied, depending on the EntireX version you are using. These are currently: EXX912L006, EXX910L015, EXX990L019 or EXX970L036. The latest product fixes are available under <i>Product Fixes</i> in the Knowledge Center in Software AG's Empower (<a href="https://empower.softwareag.com">https://empower.softwareag.com</a>) web site.</p>





## 4 Restricted Support for Adabas Features

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

For an Adabas nucleus running in cluster mode (`CLUSTER=LOCAL` or `SYSPLEX`), 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 by nuclei running in cluster mode under this Adabas Cluster Services or 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.
- 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.



# 5 Migrating from Prior Versions

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➤ **To migrate from your current Adabas Parallel Services version to Adabas Parallel Services 8.4, complete the following steps:**

- 1 Shut down all nuclei in the cluster and the ADACOM subtasks for the Router ID (SVC) / DBID set. Run Adabas ADARES PLCOPY and 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 the Adabas 8.4 SP1 (ADA841.LOAD) and Adabas Parallel Services 8.4 SP1 (ASM841.LOAD) data sets. Apply the zaps delivered with Adabas 8.4 SP1 and Adabas Parallel Services 8.4 SP1 and any Adabas Parallel Services zaps and pertinent Adabas zaps downloaded from Software AG's Empower (<https://empower.softwareag.com>) web site.
- 3 Install the Adabas 8.4 SP1 Router (SVC) if you have not already done so.
- 4 Run the ADACNV utility with TOVERS=84 to convert the database to version 8.4 format. For more information about the ADACNV utility, refer to the *Adabas Utilities Manual*.
- 5 Restart the nuclei in the cluster.

## **Migrating to Higher Service Pack (SP) Levels Later**

To migrate from one SP level of Adabas Parallel Services 8.4 to a higher SP level (after SP1), it will also be necessary to shut down the entire cluster, since every Parallel Services cluster works with only one router (Adabas SVC) and one ADACOM task/job and since both must stay active as long as the cluster is active.



# 6 Zap Information

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

## Adabas Zaps on Empower

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Please be sure to check the Knowledge Center in Software AG's Empower (<https://empower.softwareag.com>) web site for any cluster-related Adabas zaps when you install Adabas Parallel Services. The complete Adabas zaps may not be supplied with your Adabas Parallel Services product.

## Applying Zaps to Adabas Parallel Services Components

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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 can 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

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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.

# 7 End of Maintenance

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For information on how long a product is supported by Software AG, access Software AG's Empower web site at <https://empower.softwareag.com>.

Log into Empower. Once you have logged in, you can expand **Products** in the left menu of the web page and select **Product Version Availability** to access the Product Version Availability application. This application allows you to review support information for specific products and releases.





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## Documentation and Other Online Information

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The following online resources are available for you to obtain up-to-date information about your Software AG products:

## Software AG Documentation Website

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You can find documentation for all Software AG products on the Software AG Documentation website at <http://documentation.softwareag.com>. This site requires Empower credentials. If you do not have an Empower user ID and password yet, you will find instructions for registering on this site (free for customers with maintenance contracts) or you can also use the TECHcommunity website to access the latest documentation.

## Software AG TECHcommunity

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You can find documentation and other technical information on the Software AG TECHcommunity website at <http://techcommunity.softwareag.com>. You can:

- Access product documentation, if you have TECHcommunity credentials. If you do not, you will need to register and specify "Documentation" as an area of interest. If you already have TECHcommunity credentials, you can adjust your areas of interest on the TECHcommunity website by editing your TECHcommunity profile. To access documentation in the TECHcommunity once you are logged in, select **Documentation** from the **Communities** menu.
- Access articles, demos, and tutorials.
- Use the online discussion forums, moderated by Software AG professionals, to ask questions, discuss best practices, and learn how other customers are using Software AG technology.
- Link to external websites that discuss open standards and web technology.

## Software AG Empower Product Support Website

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You can find product information on the Software AG Empower Product Support website at <https://empower.softwareag.com>. This site requires Empower credentials. If you do not have an Empower user ID and password yet, you will find instructions for registering on this site (free for customers with maintenance contracts).

To submit feature/enhancement requests, get information about product availability, and download products and certified samples, select **Products & Documentation** from the menu once you are logged in.

To get information about fixes and to read early warnings, technical papers, and knowledge base articles, select **Knowledge Center** from the menu once you are logged in.

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