Adabas System Coordinator

Adabas System Coordinator Installation

Version 8.3.1

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ADABAS & NATURAL

This document applies to Adabas System Coordinator Version 8.3.1 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 About this Documentation

Document Conventions

Convention	Description
Bold	Identifies elements on a screen.
`Monospace font`	Identifies service names and locations in the format *`folder.subfolder.service`*, APIs, Java classes, methods, properties.
`Italic`	Identifies: Variables for which you must supply values specific to your own situation or environment. New terms the first time they occur in the text. References to other documentation sources.
`Monospace font`	Identifies: Text you must type in. Messages displayed by the system. Program code.
{ }	Indicates a set of choices from which you must choose one. Type only the information inside the curly braces. Do not type the { } symbols.
|	Separates two mutually exclusive choices in a syntax line. Type one of these choices. Do not type the | symbol.
[ ]	Indicates one or more options. Type only the information inside the square brackets. Do not type the [ ] symbols.
...	Indicates that you can type multiple options of the same type. Type only the information. Do not type the ellipsis (...).

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2 Adabas System Coordinator Installation

Important: Before installing or upgrading, review the release notes, readmes, changes, system requirements, and installation or upgrade guide for the products you want to install. This documentation provides information you must know about the products before installing or upgrading, and also describes information you will need to provide during installation. Documentation is available on the Software AG **Empower** website.

This document describes how to install Adabas System Coordinator using installation jobs that are:

- generated by the Software AG System Maintenance Aid (SMA), or
- taken from the job library on the installation medium and manually customized.

In either case, the relevant job numbers (prefixed by the Adabas System Coordinator product code COR) are the same and are referenced at the appropriate step of the installation procedure.

For information about using SMA, refer to the *System Maintenance Aid* documentation.

Note: The Adabas System Coordinator installation medium contains several files. Always refer to the Software AG Product Delivery Report and Release Notes that accompany the medium for specific information that may modify the general installation procedures described here.

3 Installation Prerequisites

This section describes the prerequisites for Adabas System Coordinator Version 8.3.

Operating Systems

Adabas System Coordinator is compatible with the following operating system environments:

- z/OS
- z/VSE
- BS2000

Note: For information regarding Software AG product compatibility with IBM platforms and any IBM requirements for Software AG products, please review the **Product Compatibility for IBM Platforms** for IBM Platforms web page.

Note: Adabas System Coordinator currently executes in 31-bit addressing mode only.

Adabas

Adabas System Coordinator can be used with

- any supported level of Adabas, or
- any supported level of Adabas Cluster Services, or
- any supported level of Adabas Parallel Services.

The following table describes the Adabas version specific maintenance required for supporting Adabas System Coordinator version 8.3 SP1:

Adabas Version	Maintenance
ADA83n (incl. AZP835)	COR831.LX01 (see note below)
ADA841	AI841009
ADA842	AI842004
AZP843 and above	None required

Note: The supplied COR831.LX*nn* library is only required for Adabas nuclei running Adabas 8.3.

This LX library contains compatible versions of the Adabas System Coordinator database components and must be concatenated above any Adabas 8.3 library.

For BS2000 installations, the COR831.LX*nn* library must be named in the ADD-FILE-LINK statements for the DDLIB and the BLSLIB00 file links.

For Adabas nuclei running Adabas 8.4 or later, it is no longer necessary for a COR*vrs*.LX*nn* library to be concatenated above the Adabas library for Adabas nuclei.

Adabas Nucleus Memory Requirements

The use of any Adabas System Coordinator Add-on products will require memory in the affected Adabas nucleus jobs.

The minimum memory requirements can be approximated by first considering the Add-on product mix using the table below:

	COR	AAF	AFP	ATM	AVI
Memory requirement	+1 MB	+0.25 MB	+1 MB	+1 MB	+1 MB

In addition to this a further 15k is required for each defined Adabas thread (ADARUN NT=).

Example

The approximate memory requirement for an Adabas nucleus with ADARUN NT=85 running Adabas Fastpath is calculated as follows:

```
1 MB (for COR) + 1 MB (for AFP) + (15k * 85) = 3.25 MB ↩
```

Memory requirements will be greater if any of the AFPLOOK and AVILOOK database reporting tools are activated.

For AFPLOOK:

If activated using the following defaults:

- Maximum Files = 64
- Command/Descriptors per File = 32
- Maximum Concurrent Users = 100
- Maximum CIDs per User = 10

Then the additional nucleus memory required is approximately 100k.

If the Command/Descriptors per File and Maximum CIDs per User are kept at 32 and 10 respectively:

- Each additional file above 64 files will require 1k

- Each additional user above 100 users will require 288 bytes

For AVILOOK:

If activated AVILOOK will require an additional 200k of nucleus memory.

Natural

Natural is required by the Online Services application SYSCOR.

Any supported level of Natural can be used. Refer to the Natural documentation for more information.

If the Adabas System Coordinator client component CORS09 is in use at your site then refer to **Multi-Task Server Environments using CORS09** for additional prerequisite information.

Com-plete

Any supported level of Com-plete can be used. Refer to the Com-plete documentation for more information.

Adabas System Coordinator-based Add-on products

You can use the following Adabas System Coordinator based Add-on products in conjunction with Adabas System Coordinator version 8.3:

- Adabas SAF Security (AAF) 8.2 SP2
- Adabas Fastpath (AFP) 8.2 SP2
- Adabas Transaction Manager (ATM) 8.2 SP2
- Adabas Vista (AVI) 8.2 SP2

The following table describes the Add-on product maintenance required for supporting Adabas System Coordinator version 8.3:

Add-on Product	Fix number
Adabas Fastpath	AFP822I005, AW822056, AW822057
Adabas SAF Security	AAF822I002
Adabas Transaction Manager	ATM822I003, AT822035
Adabas Vista	AVI822I006

Note: For information regarding the necessary Adabas System Coordinator-based Add-on maintenance required for the version of Adabas you are running, refer to the section *Using COR-based Add-ons* in the release notes for the appropriate Adabas version.

Multi-Task Server Environments using CORS09

The Adabas System Coordinator client component CORS09 was made widely available in Version 8.2.2 Patch level 3 as a replacement for CORS07 for those customers who run zIIP enabler for Natural in multi-task server environments.

For Adabas System Coordinator 8.3 SP1 and above, Natural zap NA97065 is a prerequisite for the continued use of CORS09 in conjunction with zIIP enabler for Natural. The absence of NA97065 may result in a RSP101 Subcode 22.

4 Before You Install

This section describes actions which must be taken prior to performing Adabas System Coordinator installation.

Configuration File

Adabas System Coordinator operates correctly only if the configuration file is continuously available while the client is active. Operational procedures are necessary to ensure that the database where the configuration file (or the optional alternate configuration file) resides is active

- before any application opens to clients
- before any TP initialization processing that involves pseudo- or real database communication
- before any Coordinator daemons are started

Prior to beginning with the installation, allocate a database number and file number for the configuration file that is shared by Adabas System Coordinator, Adabas Fastpath, Adabas Vista, and Adabas Transaction Manager.

Notes:

1. If an (optional) alternate configuration file is to be used, this must be allocated in a different database to the primary file.
2. It is your responsibility to ensure the alternate file has the same configuration content as the primary file. If either configuration file is modified, the equivalent change must also be made to the other configuration file. Failure to do so may lead to unpredictable results.
3. Both the primary and the alternate configuration files must be available at startup and shutdown of Coordinator daemons.

Adabas System Coordinator Daemon

Prior to beginning with the installation, a Node ID for each Adabas System Coordinator daemon must be allocated.

Using System Coordinator With Adabas Link Modules

Adabas System Coordinator is activated by linking an appropriate client component (CORS*nn*) with the LNKGBLS module. The LNKGBLS module must be re-assembled, specifying the parameter `COR=YES` in the LGBLSET macro. The Coordinator will not activate if the component is incorrectly linked.

Note: The LNKGBLS module is not used in BS2000 systems, the appropriate client component is linked directly with ADALNK.

Note: Adabas client-based products are not compatible with the Adabas DBID/SVC routing feature.

Use of Unmodified ADALNK

The Coordinator client component is activated by binding a stub module to the Client Adabas Link Module (ADALNK or other). This stub module is for use in client environments only. In previous versions it has been a documented restriction that the ADALNK module used by the COR daemon and Adabas servers must not contain the COR client stub. *This remains the recommended procedure.* However, in this version COR will auto-detect and bypass invalid client stub invocation in the COR daemon and Adabas, Entire System Server, or Adabas Review Hub nuclei.

You must still ensure that you use an unmodified ADALNK in Adabas utility and Entire Net-Work jobs.

Use of Client-Side ADALNK User Exits with Adabas System Coordinator

Your site may attach user exits to the Adabas Link module such as LUEXIT1/UEXITB and LUEXIT2/UEXITA. These exits will see Adabas command traffic in a form that is (mostly) unaffected by products such as Adabas Vista, Fastpath, etc. However, some sites have a need for exits to see Adabas command traffic in its modified form. If your site needs to see this then you can use some special purpose exits to achieve it:

- IEXIT1 receives control after a command has been adjusted by products such as Vista but before the command is passed through the Adabas router.
- IEXIT2 receives control after a command has been completely processed through the Adabas router and before the command result is processed by the after-processing of products such as Vista.

These exits must use CSECT names IEXIT1 and IEXIT2. They receive control in 31-bit addressing mode, they must be re-entrant and should specify AMODE 31, RMODE ANY.

The exits are linked with the COR stub and the link module by adding link-edit INCLUDE statements to the relevant COR link job. In addition to linking the exits a specific step is needed to activate for each client job (so you are able to choose which jobs they are used with and which ones they are not). In the System Coordinator Runtime Controls panel set Use additional exits to Y. See the section Maintain Client Runtime Controls in the Online Services documentation for further information.

At entry to the exit(s), the registers contain the following:

Register	Contents
1	Address of the UB.
2	Address of an 18-word save area (CICS environments)
13	Address of an 18-word save area (non-CICS environments)
14	Return address
15	Entry point address: IEXIT1 or IEXIT2

Any registers except register 15 that are modified by the user exits must be saved and restored. On return from IEXIT1/2 register 15 must be set to zero.

Note: IEXIT1/2 can be mixed with LUEXIT1/UEXITB, LUEXIT2/UEXITA.

5 Installation Procedure

This section describes the procedure for Adabas System Coordinator installation:

z/OS Installation
z/VSE Installation
BS2000 Installation

6 z/OS Installation

The Installation Medium

Review the *Software AG Product Delivery Report* that accompanies the release package before restoring the release data to disk. Information in this report supersedes the information in this documentation.

The installation medium contains the following data sets in the sequence indicated in the report:

Data Set	Contents
COR*vrs*.LOAD	COR load modules
COR*vrs*.INPL	SYSCOR INPL file
COR*vrs*.ERRN	SYSCOR error messages file
COR*vrs*.SRCE	Source modules
COR*vrs*.JOBS	Installation jobs
COR*vrs*.SYSF	Base configuration file
COR*vrs*.LX*nn*	Compatible database components for this version of the Adabas System Coordinator. This library must be added to the start of the load library concatenation in all database startup procedures, thereby replacing the equivalent modules in the Adabas library. If the Adabas nucleus is running with APF-authorization the LX*nn* library must also be APF-authorized. **Note:** This library is only applicable for Adabas nuclei running Adabas 8.3 (incl. AZP835). Starting from Adabas 8.4 SP1, it is no longer necessary for a COR*vrs*.LX*nn* library to be concatenated above the Adabas library for Adabas nuclei.

where *vrs* in data set names represents the version, revision, and system maintenance level of the product and *nn* represents the patch number of the latest LX library.

Installation Overview

The steps needed for a successful installation are as follows:

Step	Description	Required	Job Name
1	Restore the libraries from the installation medium	Yes	
2	Load (INPL) the SYSCOR application	Yes	CORI061
3	Load the configuration file and prepare SYSCOR	Yes	CORI050
4	Assemble the configuration module	Yes	CORI055
5	Add the System Coordinator to the Adabas clients	Yes	CORI060, CORI080x

Step	Description	Required	Job Name
6	Define the System Coordinator group and daemons	Required if a COR daemon is to be used	
7	Install the CICS node error program (optional)	Optional	
8	Create startup procedures for the Adabas System Coordinator daemons	Required if a COR daemon is to be used	
9	Create System Coordinator daemon disk files	Optional, depending on which products are installed and how they are configured.	CORI040
10	Define runtime controls for Client jobs and TP systems	Optional	

System Programming Considerations

In a multi-systems environment a Coordinator daemon is normally defined for each system. In a parallel sysplex daemons use the IBM XCF facility to communicate. All COR daemons are defined (in the COR configuration file) with the same group name, and this name is used as the XCF group name. The group name selected must be unique to the COR daemon group, and must *not* be the same as the group name (CLUGROUPNAME) selected for any Adabas Cluster Services database.

The Adabas System Coordinator daemon must execute:

- from an authorized load library; and
- at a higher priority than the TP monitors, databases, and jobs it is used to coordinate.

Installation Procedure

Following is the general Adabas System Coordinator installation procedure. The actual installation depends on your particular requirements and the specific contents of the release package provided by Software AG for your site. Information in the release package is intended for your system. If that information differs from the information in this section, use the release package information or contact Software AG technical support for assistance.

Step1: Copying the Medium Contents to Disk

If you are using System Maintenance Aid (SMA), refer to the SMA documentation (included on the current edition of the Natural documentation CD). If you are not using SMA, perform steps 1a, 1b and 1c as described in this section:

- Step 1a: Copy Data Set COPY.JOB from Medium to Disk
- Step 1b: Modify COPY.JOB
- Step 1c: Submit COPY.JOB

Note: If the data sets for more than one product are delivered on the medium, the data set COPY.JOB contains the JCL to unload the data sets for all delivered products from the medium to your disk. After that, you will have to perform the individual install procedure for each component.

Step 1a: Copy Data Set COPY.JOB from Medium to Disk

The data set COPY.JOB (label 2) contains the JCL to unload all other existing data sets from medium to disk. To unload COPY.JOB, use the following sample JCL:

```
//SAGTAPE JOB SAG,CLASS=1,MSGCLASS=X
//* --------------------------------
//COPY EXEC PGM=IEBGENER
//SYSUT1 DD DSN=COPY.JOB,
// DISP=(OLD,PASS),
// UNIT=(CASS,,DEFER),
// VOL=(,RETAIN,SER=<Tnnnnn>),
// LABEL=(2,SL)
//SYSUT2 DD DSN=<hilev>.COPY.JOB,
// DISP=(NEW,CATLG,DELETE),
// UNIT=3390,VOL=SER=<vvvvvv>,
// SPACE=(TRK,(1,1),RLSE),
// DCB=*.SYSUT1
//SYSPRINT DD SYSOUT=*
//SYSIN DD DUMMY
//
```

where:

```
<hilev>  is a valid high level qualifier
<Tnnnnn> is the tape number
<vvvvvv> is the desired volser
```

Step 1b: Modify COPY.JOB

Modify the COPY.JOB to conform with your local naming conventions and set the disk space parameters before submitting this job:

- set HILEV to a valid high level qualifier
- set LOCATION to a storage location
- set EXPDT to a valid expiration date

Step 1c: Submit COPY.JOB

Submit COPY.JOB to unload all other data sets from the medium to your disk.

Step 2: Load (INPL) the SYSCOR Application (Job I061)

Use sample job CORI061 to load the SYSCOR online administration and error messages file into Natural.

Step 3: Load the Configuration File and Prepare SYSCOR (Job I050)

System Coordinator and related products operate according to definitions contained in the configuration file. You must allocate a new Adabas file for the Version 8.3 configuration file and load COR*vrl*.SYSF into it using the supplied sample job CORI050. The online services will guide you through the steps required to make the new file ready for use, including conversion from previous versions of System Coordinator.

To load the configuration file

1 Load the Adabas System Coordinator configuration file from the distribution medium using the standard Adabas load utility ADALOD. Use sample job CORI050. If you are using an alternate configuration file you need to run this job to initialize both files.

2 If Natural Security is installed, define the libraries SYSCOR and SYSMP*vrs* (where *vrs* is the version you are installing, for example 821) and protect as required. You may define MENU as the startup transaction for SYSCOR. DO NOT define a startup transaction for SYSMP*vrs*.

3 Use the following parameter to define the Natural session where SYSCOR is to be used:

```
LFILE=(152,dbid,fnr<,passw><,ciph>)
```

where *dbid* and *fnr* define the primary Adabas System Coordinator file.

Alternatively, assemble the Natural parameter module with:

```
NTFILE ,ID=152,DBID=dbid,FNR=fnr
```

To convert a previous version's definitions to version 8 format

1 Logon to library SYSCOR and enter `MENU`. SYSCOR will detect that the configuration file is new and will guide you through the steps required to copy and convert the definitions from a previous version.

2 Repeat this procedure for each configuration file to be converted. The procedure only needs to be done once for each configuration file, regardless of how many products use it. Other products may have additional conversion requirements.

Step 4: Assemble the Configuration Module (Job I055)

Adabas System Coordinator parameters are located in the configuration file. At job start, the Adabas System Coordinator needs to know the location of this file. This information is kept in the configuration module.

Create the configuration module by assembling the CORMCFG parameters defining the SVC, database, and file number of the Adabas System Coordinator configuration file.

Keyword	Description
SVC=	Your installation's Adabas SVC number
DBID=	Database number for the System Coordinator configuration file
FNR=	File number for the System Coordinator configuration file
ADBID=	Database number for the alternate System Coordinator configuration file. If not specified, an alternate file will not be used.
AFNR=	File number for the alternate System Coordinator configuration file. If not specified, an alternate file will not be used.
SF148=WAIT	Use this keyword if you want client jobs to wait when the specified configuration file is not active. If you omit this keyword, the `RETRY=` setting takes effect (see below).
CRITICAL=	Use this keyword if you want System Coordinator to check for availability and correct functioning of supported add-on products. You may specify one or more of the following, separated by commas: ■ AVI - AdabasVista ■ AFP - Adabas Fastpath ■ ATM - Adabas Transaction Manager If any critical product is not functioning correctly, all Adabas requests will be rejected with response code 101, subcode 59.
DMWAIT=	Specifies a maximum time (in minutes) that the System Coordinator daemon will wait for the configuration file database to be activated. If not specified, the daemon will wait indefinitely. The default is 60.
ZOSDUMP=	This option applies to z/OS installations only and determines the style of dump the System Coordinator daemon produces, in the event of an abnormal termination.

Keyword	Description
	The default, ABEND, produces a standard operating system dump to SYSUDUMP, SYSABEND or SYSMDUMP. SVC produces an SVC dump on the system dump datasets. This can often be quicker than producing a standard dump. The daemon issues message: COR037I SVC dump created and the operating system writes messages to the system log to identify the dump dataset. If the SVC dump fails for any reason, the daemon issues message: COR038E SVC dump failed, R15: hhhhhhhh and a standard dump is produced.
RETRY=	RETRY specifies the frequency (number of Adabas calls issued in this client job) at which System Coordinator in the client job will retry access to its configuration file after a response 148. The default is 1000. Client services provided by System Coordinator and its supported add-on products are not available until the configuration file becomes active. RETRY only takes effect if `SF148=WAIT` has not been specified.

Name the resulting load module CORCFG (this is required).

Use sample job CORI055.

Step 5: Add the System Coordinator to the Adabas Client (Jobs I060, I080x)

The client components are named CORS0*n* where n is a subsystem suffix.

First, you must re-assemble the Adabas LNKGBLS table, specifying the parameter `COR=YES` in the LGBLSET macro.

Next, link the appropriate Adabas System Coordinator client component with your Adabas link components (note - the resulting COR-enabled Adabas link components must only be used for client jobs).

Finally, to enable the Adabas System Coordinator client process, make the following components available in STEPLIB (or COMPLIB or DFHRPL if indicated in the table below):

- the COR-enabled Adabas link components;
- the generated configuration module CORCFG; and
- the Adabas System Coordinator load library.

Important Note:

All Adabas System Coordinator components involved in the client process must be of the same version, release, sm-level, and patch-level. For example, for a particular client process, the version of the CORS0*n* component included in the COR-enabled Adabas link module must be identical to the version of the Adabas System Coordinator library made available to that client process.

For ease of reference, the table below lists a number of job types, the corresponding CORS0*n* component, the corresponding sample job, and any relevant installation notes that may apply.

Table Notes:

1. You must use the linkage editor options specified in the sample jobs
2. The sample install jobs referenced below may not match what is needed for the release of Adabas used at your site. Please refer to your Adabas installation documentation and JCL to ensure you use the appropriate JCL for your release, adjusted for the needs of the sample jobs supplied here.

Job Type	CORS0*n* Component	Sample Job and Installation notes
Batch/TSO	CORS01	CORI060
Com-plete	CORS02	CORI080C **Note:** 1. The COR-enabled Adabas link components should be available in COMPLIB. 2. The generated CORCFG module should be available in COMPLIB. 3. The COR modules should be available in COMPLIB.
CICS Command Level	CORS03	CORI080B **Note:** 1. The COR-enabled Adabas link components should be available in DFHRPL. 2. The generated CORCFG module should be available in DFHRPL. 3. It is recommended that the COR modules should be available in DFHRPL. Loading from STEPLIB is not recommended by Software AG because it can interfere with correct CICS threadsafe operation for Adabas. 4. If you are not running threadsafe and still decide to use STEPLIB you can only do so for COR modules other than CORCFG and CORKRN – these two must be present in the RPLLIB. 5. If you are not using the CICS program autoinstall feature, you will need to define the Coordinator Client modules (CORKRN, CASPXY, CASKRN), and the configuration module (CORCFG) to CICS. All of the modules should be defined with the following characteristics: Language: Assembler ; RELoad :No ; DAtalocation: Any ; EXECKey : User.

Job Type	CORS0*n* Component	Sample Job and Installation notes
		For sites that require CICS definitions the member CORI080R in the Coordinator JOBS library shows the input needed for all modules (for all sibling products too). **Note:** For CICS, ensure that the `LUSAVE` parameter in the Adabas link module is set to at least 72. Software AG recommends that you also use the `XWAIT=YES` parameter. **Note:** For CICS, System Coordinator uses Main Temporary Storage queues to store important control information. By default the queue names begin "COR" followed by a hexadecimal "FF" – you can change this prefix using the *Client Runtime Latency Controls*. The queue name includes the CICS job-name to ensure that it is unique in a multi-job CICS system. However, the CSD TSMODEL definition for these temporary storage queues should not specify a POOLNAME or REMOTESYSTEM, as they cannot be shared.
IMS	CORS05	CORI080G
Multi-task Batch (for Software AG products Natural RPC Server, Natural Development Server, Adabas SOA Gateway, Adabas SQL Gateway)	CORS07 / CORS09	CORI080H **Note:** See section **Installing Adabas System Coordinator in multi-task batch environments**. **Note:** 1. CORS07 is for sites which **do not use** zIIP enabler for Natural. 2. CORS09 is for sites which **do use** zIIP enabler for Natural.
Other 3rd party or in-house multi-task server environments.	CORS07 / CORS09	CORI080H **Note:** See section **Installing Adabas System Coordinator in 3rd party or in-house multi-task server environments**. **Note:** 1. CORS07 is for sites which **do not use** zIIP enabler for Natural. 2. CORS09 is for sites which **do use** zIIP enabler for Natural.
NIM: Natural TP monitor	CORS07	CORI080N **Note:** See section ***Installing Adabas System Coordinator with NIM*** for further information.

Job Type	CORS0*n* Component	Sample Job and Installation notes
Triggers and Stored Procedures **Note:** Define a System Coordinator runtime control of type "SPATs". The SPATs option is on the second screen of selectable runtime control types, accessible by selecting "more choices for type or" when adding the runtime control.	CORS08	CORI080S **Note:** You must ensure that this ADALNK is used **only** by Adabas nuclei running Triggers and Stored Procedures and is not used in any client job or Coordinator daemon.

Step 6: Define a System Coordinator Group

Define your System Coordinator group and member(s). This is required if you intend to use:

- Adabas Fastpath
- clustered applications with dynamic transaction routing.

Job parameters for each product also contain settings that are relevant to the operation of the Adabas System Coordinator. For more information, see SYSCOR Administration.

Step 7: Install the CICS Node Error Program (Optional)

The node error program CORNEP is used by sites running CICS command-level applications in CICS/ESA or CICS Transaction Server for z/OS. It is not an essential component, but it does improve efficiency when reclaiming user memory after user sessions terminate.

CORNEP must be called as a started task (with Transaction ID ANEP) from the real CICS node error program DFHZNEP. If you do not use DFHZNEP, a sample is provided on the source library. If you do use DFHZNEP, you will need to implement the code for starting CORNEP into your own DFHZNEP as shown in the provided sample source.

Following are the required CICS resource definition parameters for CORNEP:

```
Language: Assembler
RESident: No
Datalocation: Any
EXECKey: User
```

Note: To use CORNEP, assemble your Adabas link module with `PARMTYP=ALL` on the ADAGSET (Version 7 link module) or LGBLSET (Version 8 link module) macro.

Note: CORNEP must be called only from DFHZNEP.

Step 8: Create Startup Procedures for the System Coordinator Daemon(s)

The following is a job example for running a Adabas System Coordinator daemon:

```
//SYSCO1 PROC
//*-------------------------------------------------------------------*
//* System Coordinator SYSCO Vv.r.s. STARTUP *
//*-------------------------------------------------------------------*
//SYSCO1 EXEC PGM=SYSCO,REGION=0M,TIME=1440
//STEPLIB DD DISP=SHR,DSN=SAG.CORvrs.LOAD
// DD DISP=SHR,DSN=ADABAS.Vvrs.LOAD
//SYSUDUMP DD SYSOUT=*
//CORDUMP DD SYSOUT=*
//SYSPRINT DD SYSOUT=*
//DDPRINT DD SYSOUT=*
//DDCARD DD DISP=SHR,DSN=SAG.CORvrs.SRCE(CORCNTL)
//*
```

The file referenced by the DDCARD statement should contain the following control statements:

```
PRODUCT=CAS
```

```
PRODUCT=AFP (If FASTABM is to be run)
```

```
FORCE=NO
```

If SYSCO terminates abnormally, it may be necessary to specify `FORCE=YES` on restart.

Step 9: Create System Coordinator daemon disk files

Some products require a daemon disk file. This is described in the relevant product documentation. Tailor and run job CORI040 to create each required disk file. Examples of products for which you might need to create disk files are:

- System Coordinator's latency file for latency management of TP systems.
- Adabas Transaction Manager's recovery file.

Step 10: Define Runtime Controls for Client Jobs and TP Systems

System Coordinator can be installed for all client jobs, but will be inactive until runtime controls are defined. Controls are defined in the SYSCOR Natural application, using the Maintenance menu. Refer to the *Online Services* section for further information.

Alternatively, you can delay this task until you have installed the appropriate add-on product(s). You may then use any of the supplied maintenance applications (SYSAFP, SYSAVI or SYSATM).

Installing Adabas System Coordinator in multi-task batch environments

Multi-task batch environments have special requirements. These are discussed below for the most common environment types.

Installing the Adabas System Coordinator with the Adabas SQL Gateway in z/OS

Background

The Adabas SQL Gateway uses z/OS UNIX Systems Services to run as a multi-threaded server. This requires re-entrant operation which has additional installation considerations for products based upon Adabas System Coordinator such as Adabas Fastpath, Adabas Vista and Adabas Transaction Manager.

The Adabas SQL Gateway uses z/OS UNIX Systems Services to run either in basic or authorized multi-threaded server mode. This choice affects the method of installation of the Adabas System Coordinator as the base for Adabas Fastpath, Adabas Vista, Adabas Transaction Manager, etc.

Specifically, it is important that a single copy of the Adabas Link Module (ADALNKR) containing the System Coordinator interface (CORS07) is used, and that this module is linked as specified in the sample CORI080H job.

There are two ways to run the Adabas SQL Gateway which directly affect the way Adabas System Coordinator must be installed:

- Basic multi-thread (not APF authorized): When the Adabas SQL Gateway runs without APF authorization it does not activate its low-level RACF interface.
- Authorized multi-thread (APF authorized): In its authorized state the Adabas SQL Gateway activates its RACF interface.

Common Installation Steps

The following steps are required for both installation types:

1. Complete normal SQL Gateway installation (and make sure it works correctly in isolation) before adding the System Coordinator interface. (See the *Installation for z/OS* section of the Adabas SQL gateway documentation).
2. Assemble the Adabas Link routine globals module LNKGBLS and link ADALNKR using sample job CORI080H. This COR-enabled ADALNKR should be made available in the appropriate STEPLIB concatenation.
3. Modify the Server Job CNXADA. Include the Coordinator load library, plus any installed add-on product libraries (Fastpath, Vista, ATM), in the STEPLIB concatenation. For the authorized installation, all libraries must be APF-authorized.
4. Define the SQL Gateway started task as job type multi-TCB to the desired product(s) in the appropriate administration center: Adabas System Coordinator (SYSCOR), Adabas Fastpath (SYSAFP), Adabas Vista (SYSAVI) and/or Adabas Transaction Manager (SYSATM). See the relevant product documentation for details. The Multi-TCB option is on the second screen of selectable runtime control types, accessible by selecting “more choices for type or” when adding the runtime control.

Basic Multi-Thread (not APF authorized) Install

for this type of operation:

1. Ensure that SQL Gateway basic multi-thread installation is completed before adding the System Coordinator interface.
2. Re-link the module named CNXRUNA with the REUS attribute, replacing ADALNK with ADAUSER. Here is a sample of the required JCL:

```
//LKED   EXEC PGM=IEWL,PARM='REUS'
//ADALIB   DD DSN=ADABAS.VVRS.LOAD,DISP=SHR    ... Adabas library ...
//SYSLMOD  DD DSN=PPP.CONNX.LOAD,DISP=SHR     ... Connx Library ...
//SYSPRINT DD SYSOUT=*
//SYSLIN   DD *
 REPLACE ADABAS   ... Delete ADALNK entry ...                          ↩

 INCLUDE SYSLMOD(CNXRUNA)
 INCLUDE ADALIB(ADAUSER)
 ENTRY MAIN
 NAME CNXRUNA(R)
/*
```

The Linkage Editor will produce warning messages indicating that some Csects are not re-usable. These can be ignored.

3 Re-link the module named CNXADA0B with the REUS attribute, replacing ADALNK with ADAUSER. Here is a sample of the required JCL:

```
//LKED   EXEC PGM=IEWL,PARM='REUS'
//ADALIB   DD DSN=ADABAS.VVRS.LOAD,DISP=SHR    ... Adabas library ...
//SYSLMOD  DD DSN=PPP.CONNX.LOAD,DISP=SHR     ... Connx Library ...
//SYSPRINT DD SYSOUT=*
//SYSLIN   DD *
 REPLACE ADABAS       ... Delete ADALNK entry ...                      ↩

 INCLUDE SYSLMOD(CNXADAOB)
 INCLUDE ADALIB(ADAUSER)
 ENTRY MAIN
 NAME CNXADAOB(R)
/*
```

The Linkage Editor will produce warning messages indicating that some Csects are not re-usable. These can be ignored.

Do *not* specify the RENT atrribute for either of these modules. The linked modules must be re-usable but not re-entrant. Failure to do this will result in the System Coordinator failing with S0C4 (addressing) abends.

4 Ensure that the ADARUN parameter `PROG=RENTUSER` is specified in order that the COR-enabled ADALNKR (created by CORI080H and made available in the STEPLIB concatenation) is used.

Authorized Multi-Thread Install

for this type of operation:

1 Ensure that SQL Gateway authorized multi-thread installation is completed before adding the System Coordinator interface.

2 Re-link the module named CNXRUNA with the RENT and AC=1 attributes, replacing ADALNK with CORLNKR. Here is a sample of the required JCL:

```
//LKED   EXEC PGM=IEWL,PARM='RENT,AC=1'
//CORLIB   DD DSN=SAG.CORVRS.LOAD,DISP=SHR   ... COR library ...
//SYSLMOD  DD    DSN=PPP.CONNX.LOAD,DISP=SHR  ... Connx Library ...
//SYSPRINT DD    SYSOUT=*
//SYSLIN   DD    *
 REPLACE ADABAS   ... Delete ADALNK entry ...                          ↩

 INCLUDE SYSLMOD(CNXRUNA)
 INCLUDE CORLIB(CORLNKR)
 ENTRY MAIN
 NAME CNXRUNA(R)
/*
```

3 Re-link the module named CNXADA0B with the RENT and AC=1 attributes, replacing ADALNK with CORLNKR. Here is a sample of the required JCL:

```
//LKED   EXEC PGM=IEWL,PARM='RENT,AC=1'
//CORLIB   DD DSN=SAG.CORVRS.LOAD,DISP=SHR   ... COR library ...
//SYSLMOD  DD    DSN=PPP.CONNX.LOAD,DISP=SHR   ... Connx Library ...
//SYSPRINT DD    SYSOUT=*
//SYSLIN   DD    *
 REPLACE ADABAS   ... Delete ADALNK entry ...                          ↩

 INCLUDE SYSLMOD(CNXADAOB)
 INCLUDE CORLIB(CORLNKR)
 ENTRY MAIN
 NAME CNXADAOB(R)
/*
```

Installing Adabas System Coordinator with Natural RPC Batch Server

In order for execution with a Natural RPC Batch Server using multiple tasks you must do the following:

1. A *multi*-TCB type runtime control must be defined for the Natural RPC Batch Server job. Multi-TCB type option is on the second screen of selectable runtime control types…select *more choices for type* when adding the runtime control to see the *multi*-TCB choice.
2. Link the Adabas System Coordinator client component (CORS09 if zIIP enabler for Natural is in use or CORS07 if it is not) to the re-entrant Adabas link module using sample job CORI080H. The resulting COR-enabled link module must be named according to the requirements of the Natural RPC Batch Server (for example, ADALNKR) and must be linked with the attributes specified in the sample job.
3. Use the Natural profile parameter `ADANAME` and set `ADANAME=ADALNKR` (or whatever you have named the COR-enabled link module). This will cause Natural to load ADALNKR dynamically at runtime.

   Instead of using `ADANAME` you may link the COR-enabled link module with the Natural RPC Server front-end, however this will only operate correctly if the Natural front-end is loaded from non-authorized libraries, otherwise protection exceptions may occur. Our recommendation is therefore to use `ADANAME`.
4. The COR load library must be added to the STEPLIB concatenation of the Natural RPC Batch Server job.
5. The load library for the additional products being used (Fastpath, Vista, Transaction Manager etc) must be added to the STEPLIB concatenation for the Natural RPC Batch Server job.
6. Restart the Natural RPC Batch Server.

Installing Adabas System Coordinator with Natural Development Server

In order for execution with a Natural Development Server using multiple tasks you must do the following:

1. A *multi*-TCB type runtime control must be defined for the Natural Development Server job. Multi-TCB type option is on the second screen of selectable runtime control types…select *more choices for type* when adding the runtime control to see the *multi*-TCB choice.
2. Link the Adabas System Coordinator client component (CORS09 if zIIP enabler for Natural is in use or CORS07 if it is not) to the re-entrant Adabas link module using sample job CORI080H. The resulting load module must be named according to the requirements of the Natural Development Server (for example, ADALNKR) and linked with the attributes specified in sample job CORI080H.
3. Use the Natural profile parameter `ADANAME` and set `ADANAME=ADALNKR` (or whatever you have named the COR-enabled link module). This will cause Natural to load ADALNKR dynamically at runtime. Instead of using `ADANAME` you may link the COR-enabled link module with the

Natural Development Server front-end, however this will only operate correctly if the Natural front-end is loaded from non-authorized libraries, otherwise protection exceptions may occur. Our recommendation is therefore to use ADANAME.

4. The COR load library must be added to the STEPLIB concatenation of the Natural Development Server job.
5. The load library for the additional products being used (Adabas Fastpath, Adabas Vista, Adabas Transaction Manager etc) must be added to the STEPLIB concatenation for the Natural Development Server job.
6. Restart the Natural Development Server.

Installing Adabas System Coordinator with the Adabas SOA Gateway

In order for execution with the Adabas SOA Gateway you must do the following:

1. A *multi-TCB* type runtime control must be defined for the Adabas SOA Gateway job. Multi-TCB type option is on the second screen of selectable runtime control types…select *more choices for type* when adding the runtime control to see the *multi-TCB* choice.
2. Link the Adabas System Coordinator client component (CORS07) to the re-entrant Adabas link module using sample job CORI080H. The resulting load module must be named according to the requirements of the Adabas SOA Gateway (for example, ADALNKR) and linked with the attributes specified in sample job CORI080H.
3. The resulting load module must be named according to the requirements of the Adabas SOA Gateway (for example, ADALNKR) and linked with the attributes specified in sample job CORI080H.
4. The COR load library must be added to the STEPLIB concatenation of the Adabas SOA Gateway job.
5. The load library for the additional products being used (Fastpath, Vista, Transaction Manager etc) must be added to the STEPLIB concatenation for the Adabas SOA Gateway job.
6. Restart the Adabas SOA Gateway.

Installing Adabas System Coordinator in 3rd party or in-house multi-task server environments

This section applies to 3rd party and customer-written multi-task batch applications designed to use the re-entrant Adabas link module. Note: Quite obviously, these types of environments are unknown to Software AG so the information here is only a guideline on what may be appropriate, the specifics of what is actually appropriate are dictated by the design of the server in question. Therefore you must check with Software AG in case there are any other considerations before implementing.

In order for execution with 3rd party or in-house multi-task server environments you must do the following:

1. A *multi-TCB* type runtime control must be defined for the multi-task server job. Multi-TCB type option is on the second screen of selectable runtime control types…select *more choices for type* when adding the runtime control to see the *multi-TCB* choice.
2. Link the Adabas System Coordinator client component (CORS07) to the re-entrant Adabas link module using sample job CORI080H. The resulting load module must be named according to the requirements of the multi-task server (for example, ADALNKR) and linked with the attributes specified in sample job CORI080H.
3. The resulting load module must be named according to the requirements of the multi-task server (for example, ADALNKR) and linked with the attributes specified in sample job CORI080H.
4. The COR load library must be added to the STEPLIB concatenation of the multi-task server job.
5. The load library for the additional products being used (Fastpath, Vista, Transaction Manager etc) must be added to the STEPLIB concatenation for the multi-task server job.
6. Restart the multi-task server.

Usually, the server application must ensure that either:

- the task which causes the COR environment to initialize (usually the first task to issue an Adabas call) stays active for the duration of the job

or

- the load modules required for the product are pre-loaded by a task which stays active for the duration of the job. The modules required for COR are listed above (under Job Type CICS Command Level) and each product names its required modules.

Installing Adabas System Coordinator with NIM

To install Adabas System Coordinator to run with the TP system NIM you must do the following:

1. A *multi-TCB* type runtime control must be defined for the NIM job. Multi-TCB type option is on the second screen of selectable runtime control types…select *more choices for type* when adding the runtime control to see the *multi-TCB* choice.
2. Adjust and use the sample job CORI080N to link your re-entrant Adabas link module with the System Coordinator components.
3. Name the supplied NIMUEXC as the NIM user exit C.
4. Name the supplied NIMUEXD as the NIM user exit D.
5. An additional module (CORXNIM) is needed (use sample job CORI090) if any of the following is true…
   - You have another NIM exit C and/or D. Name these other exit modules here so that System Coordinator will invoke them after the actual Coordinator equivalents have run.

Here is an example of how to name these other exit modules in the CORI090 job:

```
//SYSIN    DD *
         CORMNIM EXITC=TESTEXC,    <== ENTER NIM EXIT C MODULE NAME
               EXITD=TESTEXD       <== ENTER NIM EXIT D MODULE NAME
/*
```

- Your version of NIM pre-dates NIM 4.5.3. For these earlier releases…

  i. Identify one of the four GlobMap user words that is available for use by System Coordinator.
  ii. Identify one of the four TaskMap user words that is available for use by System Coordinator (it does not have to be the same number as the GlobMap).

  Here is an example of how to identify the GlobMap and TaskMap user word fields in the CORI090 job:

```
//SYSIN    DD *
         CORMNIM GBLWORD=GBLUWRD3, <== GLOBAL USER WORD FOR USE BY COR
               TSKWORD=TSKUSRW2    <== TASK USER WORD FOR USE BY COR
/*
```

6. The System Coordinator load library must be added to the STEPLIB concatenation of your NIM job.
7. The load libraries for the additional products being used (Fastpath, Vista, Transaction Manager etc) must be added to the STEPLIB concatenation for your NIM job.
8. Restart NIM.

Implementing Adabas System Coordinator for zIIP

This documentation describes the implementation of Adabas System Coordinator for zIIP.

- Messages and Codes

Prerequisites

zIIP support by Adabas System Coordinator requires that Adabas for zIIP is installed at your site.

Adabas for zIIP relevant prerequisites are described in *Prerequisites* in *Installing Adabas for zIIP* in the *Installation for z/OS* Adabas documentation.

The following table describes the additional Add-on product maintenance for supporting Adabas System Coordinator for zIIP:

Add-on Product	Fix number
Adabas Fastpath	None required.
Adabas SAF Security	AX822013
Adabas Transaction Manager	AT822035
Adabas Vista	None required.

Libraries

Mainframe License Check version 1.3.3 is the minimum MLC version required for the Adabas for zIIP license check performed by the Adabas System Coordinator daemon when running `ZIIP=YES` (see also **License** below).

For up to date information on the required MLC version please refer to the Adabas documentation appropriate for the version of Adabas you are running.

License

An Adabas System Coordinator Daemon that is to run with zIIP activated requires the availability of the Adabas for zIIP license file (AZPAD). If the AZPAD license is not provided or erroneous, the Daemon will run with zIIP deactivated.

The license can be made available to the Adabas System Coordinator Daemon in exactly the same way it is made available to an Adabas nucleus, that is, as a load module with the name AZPADLIC.

Alternatively, the license file can be referred to by a “DDLAZPAD” DD statement in the Daemon job/started task. This is a fall back in case the AZPADLIC module cannot be loaded.

Refer to the licensing information in the Adabas documentation for further information.

Implementation Steps

After following the standard Installation Procedure, perform the following additional steps to implement Adabas System Coordinator for zIIP

1 Modify your Daemon job/started task as follows:

- If you are running Adabas for zIIP version 8.4 or below, replace the standard Adabas library in the Daemon job/started task with the AZPvrs library installed at your site.
- Include the MLCvrs library for licensing support.
- Include your license module or dataset (see **License** above)

For example:

```
//SYSCO1 PROC
//*-------------------------------------------------------------------*
//* System Coordinator SYSCO Vv.r.s. STARTUP *
//*-------------------------------------------------------------------*
//SYSCO1   EXEC PGM=SYSCO,REGION=0M,TIME=1440
//STEPLIB  DD DISP=SHR,DSN=SAG.CORvrs.LOAD
//         DD DISP=SHR,DSN=SAG.ADAvrs.LOAD
//         DD DISP=SHR,DSN=SAG.MLCvrs.LOAD
//         DD DISP=SHR,DSN=your.azpadlic.load.library
//SYSUDUMP DD SYSOUT=*
//CORDUMP  DD SYSOUT=*
//SYSPRINT DD SYSOUT=*
//DDPRINT  DD SYSOUT=*
//DDCARD   DD DISP=SHR,DSN=SAG.CORvrs.SRCE(CORCNTL)
//*
```

2 Specify `ZIIP=YES` in the Daemon Runtime Parameters.

3 Start the Adabas System Coordinator Daemon

Messages and Codes

New messages and user abend codes may be observed when running the Adabas System Coordinator Daemon with zIIP activated.

The description of these new messages and codes is organized in the following parts:

ADAI* - ADAIOR System Messages	Describes ADAIOR system messages.
ADAZ* - ADAZIP System Messages	Describes ADAZIP system messages.
CORD* - Adabas System Coordinator Daemon Messages	Describes messages issued by the Adabas System Coordinator daemon.
MLC* - Software AG Mainframe Licensing Error Messages	Describes error messages issued by Software AG's mainframe licensing software and the license utility.
User Abend Codes	Describes user abend codes.

For ADAI*, ADAZ*, MLC* and User Abend Codes, refer to the corresponding sections of the appropriate Adabas *Messages and Codes* documentation for the version of Adabas you are using.

7 z/VSE Installation

The Installation Medium

Review the *Software AG Product Delivery Report* that accompanies the release package before restoring the release data to disk. Information in this report supersedes the information in this documentation.

The installation medium contains the following data sets in the sequence indicated in the report:

Data Set	Contents
COR*vrs*.LIBR	Source, macro, object, and load modules
COR*vrs*.INPL	SYSCOR INPL file
COR*vrs*.ERRN	SYSCOR error messages file
COR*vrs*.SYSF	Base configuration file
COR*vrs*.LX*nn*	Compatible database components for this version of the Adabas System Coordinator. This library must be added to the start of the load library concatenation in all database startup procedures, thereby replacing the equivalent modules in the Adabas library. **Note:** This library is only applicable for Adabas nuclei running Adabas 8.3 (incl. AZP835). Starting from Adabas 8.4 SP1, it is no longer necessary for a COR*vrs*.LX*nn* library to be concatenated above the Adabas library for Adabas nuclei.

where *vrs* in data set names represents the version, revision, and system maintenance level of the product and *nn* represents the patch number of the latest LX library.

Installation Overview

The steps needed for a successful installation are as follows:

Step	Description	Required	Job Name
1	Restore the libraries from the installation medium	Yes	
2	Load (INPL) the SYSCOR application	Yes	CORI061.J
3	Load the configuration file and prepare SYSCOR	Yes	CORI050.J
4	Assemble the configuration module	Yes	CORI055.J
5	Add the Adabas System Coordinator to the Adabas clients	Yes	CORI060.J, CORI080x.J (for Version 8 Adalnks) CORI0607.J, CORI070x.J (for Version 7 Adalnks)
6	Define the Adabas System Coordinator group and members	Required if a COR daemon is to be used	

Step	Description	Required	Job Name
7	Install the CICS node error program (optional)	Optional	
8	Create startup procedures for the Adabas System Coordinator daemon(s)	Required if a COR daemon is to be used	
9	Define runtime controls for Client jobs and TP systems	Yes	

System Programming Considerations

The Adabas System Coordinator daemon must execute at a higher priority than the TP monitors and jobs it coordinates.

Corrections for the Adabas System Coordinator will be distributed as zaps which are applied using the MSHP CORRECT facility. Before applying corrections you must define Adabas System Coordinator to MSHP with the `MSHP ARCHIVE` command. Here is a sample job to do this:

```
// JOB ARCHIVE ARCHIVE COORDINATOR
// OPTION LOG
// EXEC MSHP
ARCHIVE CORvrs
COMPRISES 9001-COR-00
RESOLVES 'SOFTWARE AG - SYSTEM CORDINATOR Vv.r'
ARCHIVE 9001-COR-00-vrs
RESIDENCE PRODUCT=CORvrs -
PRODUCTION=saglib.CORvrs -
GENERATION=saglib.CORvrs
/*
/&
```

Installation Procedure

Following is the general Adabas System Coordinator installation procedure. The actual installation depends on your particular requirements and the specific contents of the release package provided by Software AG for your site. Information in the release package is intended for your system. If that information differs from the information in this section, use the release package information or contact Software AG technical support for assistance.

Step 1: Restore Libraries from the Installation Medium

Use the following sample JCS to restore the Adabas System Coordinator library. Modify the following variables to reflect the standards at your site:

Variable	Is the...
cuu	medium unit number
tttttt	volume serial number of the installation medium
vrs	version, revision, and system maintenance level
xx	file spacing information; see the Software AG Product Delivery Report

```
* $$ JOB JNM=LIBREST,CLASS=O,DISP=D
* $$ LST CLASS=A,DISP=H
// JOB LIBREST
// ASSGN SYS006,cuu,VOL=tttttt
// ASSGN SYS005,IGN
// MTC REW,SYS006
// MTC FSF,SYS006,xx
// EXEC LIBR
RESTORE S=SAGLIB.CORvrs:SAGLIB.CORvrs -
TAPE=SYS006 TL=tttttt LIST=Y
/*
// MTC REW,SYS006
/&
* $$ EOJ
```

Note: The library contains the System Coordinator phases which must be available to the various databases, TP monitors, and batch jobs that will use Adabas System Coordinator.

Step 2: Load (INPL) the SYSCOR Application (Job I061)

Use sample job CORI061.J to load the SYSCOR online administration and error messages file into Natural.

Step 3: Load the Configuration File and Prepare SYSCOR (Job I050)

System Coordinator and related products operate according to definitions contained in the configuration file. You must allocate a new Adabas file for the Version 8.1 configuration file and load CORvrl.SYSF into it using the supplied sample job CORI050.J. The online services will guide you through the steps required to make the new file ready for use, including conversion from previous versions of System Coordinator.

To load the configuration file

1 Load the Adabas System Coordinator configuration file from the distribution medium using the standard Adabas load utility ADALOD. Use sample job CORI050.J. If you are using an alternate configuration file you need to run this job to initialize both files.

2 If Natural Security is installed, define the libraries SYSCOR and SYSMP*vrs* (where *vrs* is the version you are installing, for example 812) and protect as required. You may define MENU as the startup transaction for SYSCOR. DO NOT define a startup transaction for SYSMP*vrs*.

3 Use the following parameter to define the Natural session where SYSCOR is to be used:

```
LFILE=(152,dbid,fnr<,passw><,ciph>)
```

where *dbid* and *fnr* define the primary Adabas System Coordinator file.

Alternatively, assemble the Natural parameter module with:

```
NTFILE ,ID=152,DBID=dbid,FNR=fnr
```

To convert a previous version's definitions to version 8 format

1 Logon to library SYSCOR and enter `MENU`. SYSCOR will detect that the configuration file is new and will guide you through the steps required to copy and convert the definitions from a previous version.

2 Repeat this procedure for each configuration file to be converted. The procedure only needs to be done once for each configuration file, regardless of how many products use it. Other products may have additional conversion requirements.

Step 4: Assemble the Configuration Module (Job I055)

Adabas System Coordinator parameters are located in the configuration file. At job start, the Adabas System Coordinator needs to know the location of this file. This information is kept in the configuration module.

Create the configuration module by assembling the `CORMCFG` parameters defining the SVC, database, and file number of the Adabas System Coordinator configuration file.

Keyword	Description
SVC=	Your installation's Adabas SVC number
DBID=	Database number for the System Coordinator configuration file
FNR=	File number for the System Coordinator configuration file
ADBID=	Database number for the alternate System Coordinator configuration file. If not specified, an alternate file will not be used.

Keyword	Description
AFNR=	File number for the alternate System Coordinator configuration file. If not specified, an alternate file will not be used.
SF148=WAIT	Use this keyword if you want client jobs to wait when the specified configuration file is not active. If you omit this keyword, the RETRY= setting takes effect (see below).
CRITICAL=	Use this keyword if you want System Coordinator to check for availability and correct functioning of supported add-on products. You may specify one or more of the following, separated by commas: ■ AVI -Adabas Vista ■ AFP - Adabas Fastpath ■ ATM - Adabas Transaction Manager If any critical product is not functioning correctly, all Adabas requests will be rejected with response code 101, subcode 59.
DMWAIT=	Specifies a maximum time (in minutes) that the System Coordinator daemon will wait for the configuration file database to be activated. If not specified, the daemon will wait indefinitely. The default is 60.
RETRY=	RETRY specifies the frequency (number of Adabas calls issued in this client job) at which System Coordinator in the client job will retry access to its configuration file after a response 148. The default is 1000. Client services provided by System Coordinator and its supported add-on products are not available until the configuration file becomes active. RETRY only takes effect if SF148=WAIT has not been specified.

Name the resulting load module CORCFG (this is required).

Use sample job CORI055.J.

Step 5: Add the System Coordinator to the Adabas Client (Jobs I060, I070x, I080x)

Link the appropriate Adabas System Coordinator client component with your Adabas link modules.

The client components are called CORS1*n* where *n* is a subsystem suffix.

Note: The resulting COR-enabled Adabas link components are for use by client jobs only.

Adabas System Coordinator is compatible with Version 8 and Version 7 link modules. When using Version 8 link modules you must re-assemble the LNKGBLS table, specifying the parameter COR=YES in the LGBLSET macro.

To enable the Adabas System Coordinator client process make the following available:

- the COR-enabled Adabas link components;
- the generated configuration module CORCFG; and
- the Adabas System Coordinator load library.

If you are migrating from a previous version, you must ensure that you use the new load library modules. It is not possible to use the Version 8 link module stub with Coordinator modules from a previous version.

Job Type	Stub Module	Sample Job and Installation notes
Batch	CORS11	CORI060.J (Version 8 link), CORI0607.J (Version 7 Link)
Com-plete	CORS12	CORI080C.J (Version 8 link), CORI070C.J (Version 7 Link)
CICS Command Level	CORS13	CORI080B.J (Version 8 link), CORI070B.J (Version 7 Link) **Note:** If you are installing under CICS, and you are not using the CICS program autoinstall feature, you will need to define the Coordinator Client modules (CORKRN, CASPXY, CASKRN), and the configuration module (CORCFG) to CICS. All of the modules should be defined with the following characteristics: Language: Assembler ; RELoad :No ; DAtalocation: Any ; EXECKey : User. For sites that require CICS definitions the member CORI080R in the Coordinator JOBS library shows the input needed for all modules (for all sibling products too). **Note:** For CICS, ensure that the `LUSAVE` parameter in the Adabas link module is set to at least 72. Software AG recommends that you also use the `XWAIT=YES` parameter. **Note:** For CICS, System Coordinator uses Main Temporary Storage queues to store important control information. By default the queue names begin "COR" followed by a hexadecimal "FF" – you can change this prefix using the *Client Runtime Latency Controls*. The CSD TSMODEL definition for these temporary storage queues must not specify a POOLNAME, as they cannot be shared.
Triggers and Stored Procedures	CORS18	CORI080S.J (Version 8 link), CORI070S.J (Version 7 Link)

Step 6: Define a System Coordinator Group

Define a System Coordinator group and member(s). This is required if you intend to use:

- Adabas Fastpath
- clustered applications with dynamic transaction routing.

Job parameters for each product also contain settings that are relevant to the operation of the Adabas System Coordinator. For more information, see SYSCOR Administration.

Step 7: Install the CICS Node Error Program (Optional)

The node error program CORNEP is used by sites running CICS command-level applications. It is not an essential component, but it does improve efficiency when reclaiming memory after user sessions terminate.

CORNEP is started (with Transaction ID ANEP) from the real CICS node error program DFHZNEP. The source for DFHZNEP is supplied on the installation medium and can be installed without change. If you have your own DFHZNEP program already installed, you will need to implement the code for starting CORNEP into your own DFHZNEP.

Following are the required CICS resource definition parameters for CORNEP:

```
Language: Assembler
RESident: No
Datalocation: Any
EXECKey: User
```

Note: To use CORNEP, assemble your Adabas link module with `PARMTYP=ALL` on the ADAGSET (Version 7 link module) or LGBLSET (Version 8 link module) macro.

Note: CORNEP must be called only from DFHZNEP.

Step 8: Create Startup Procedures for the Adabas System Coordinator Daemon(s)

The following is a job example for running a Adabas System Coordinator daemon:

```
* ££ JOB JNM=SYSCO1,CLASS=5,DISP=D
* ££ LST CLASS=A,DISP=D
* ******************************************************
// JOB SYSCO1
* ******************************************************
* JOB TO RUN SYSCO: THE SYSTEM COORDINATOR *
* ******************************************************
// OPTION NOSYSDUMP

// LIBDEF PHASE,SEARCH=(SAGLIB.CORvrs,SAGLIB.ADAvrs)
// EXEC SYSCO,SIZE=AUTO
PRODUCT=CAS
FORCE=NO
/*
* *********** JOB END SYSCO1
/&
* ££ EOJ
```

If SYSCO terminates abnormally, it may be necessary to specify `FORCE=YES` on restart.

Step 9: Define Runtime Controls for Client Jobs and TP Systems

System Coordinator can be installed for all client jobs, but will be inactive until runtime controls are defined. Controls are defined in the SYSCOR Natural application, using the Maintenance menu. Refer to the *Online Services* section for further information.

Alternatively, you can delay this task until you have installed the appropriate add-on product(s). You may then use any of the supplied maintenance applications (SYSAFP, SYSAVI or SYSATM).

8 BS2000 Installation

The Installation Medium

Review the *Software AG Product Delivery Report* that accompanies the release package before restoring the release data to disk. Information in this report supersedes the information in this documentation.

The installation medium contains the following files in the sequence indicated in the report:

File	Contents
COR*vrs*.SRC	COR source modules
COR*vrs*.JOBS	COR installation jobs
COR*vrs*.MOD	COR load modules
COR*vrs*.INPL	SYSCOR objects
COR*vrs*.ERRN	SYSCOR error messages
COR*vrs*.SYSF	COR base configuration file
COR*vrs*.LX*nn*	Compatible database components for this version of the Adabas System Coordinator. This library must be named in the DDLIB and BLSLIB00 ADD-FILE-LINK statements in all database startup procedures, thereby overriding modules of the same name in the base Adabas library. **Note:** This library is only applicable for Adabas nuclei running Adabas 8.3. Starting from Adabas 8.4 SP1, it is no longer necessary for a CORvrs.LXnn library to be concatenated above the Adabas library for Adabas nuclei.

where *vrs* in file names represents the version, revision, and system maintenance level of the product and *nn* represents the patch number of the latest LX library.

Installation Checklist

After copying the medium contents to disk, the following checklist identifies the steps necessary to complete the installation:

Step	Description	Required	Job Name
1	Load (INPL) the SYSCOR application	Yes	CORI061
2	Load the configuration file and prepare SYSCOR	Yes	CORI050
3	Assemble the configuration module	Yes	CORI055
4	Add the Adabas System Coordinator to the Adabas clients	Yes	CORI060, CORI080x

Step	Description	Required	Job Name
5	Define a System Coordinator group and member(s)	Required if a COR daemon is to be used	
6	Create startup procedures for the Adabas System Coordinator daemon(s)	Required if a COR daemon is to be used	
7	Define runtime controls for Client jobs and TP systems	Yes	

System Programming Considerations

Task Priority and Privileges

The Adabas System Coordinator daemon must execute at a higher task priority than the TP monitors and jobs it coordinates. The daemon requires system administrator (TSOS) privileges because it uses a JOBINFO macro to monitor job activity.

Memory Pools

Multiple jobs (UTM jobs, for example) defined in the Adabas System Coordinator groups use memory allocated from shared memory pools. For BS2000, Adabas System Coordinator requires that you specify the virtual start address and size of these shared memory pools.

Daemon shared memory pool

Session related memory for all clients using UTM services managed by the Adabas System Coordinator daemon are maintained in this daemon shared memory pool. Refer to the Daemon Group parameter Pool settings for BS2000 for more information.

UTM Service shared memory pool

Each UTM service has its task related memory maintained in an individual UTM service shared memory pool. Refer to the Client Runtime Controls parameter UTM pool settings for more information.

Note: Please ensure these shared memory pool addresses and sizes do not overlap each other.

Copying the Medium Contents to a BS2000 Disk

To copy the medium contents to a BS2000 disk:

1 Copy the library SRV*nnn*.LIB from medium to disk.

This action is not necessary if you have already copied the library SRV*nnn*.LIB from another Software AG medium. For more information, refer to the element #READ-ME in this library.

The library SRV*nnn*.LIB is stored on the medium as the sequential file SRV*nnn*.LIBS containing LMS commands. The current version nnn can be obtained from the Software AG Product Delivery Report. To convert this sequential file into an LMS-library, execute the following commands:

```
/IMPORT-FILE SUPPORT=*TAPE(FILE-NAME=SRVnnn.LIBS, -
/ VOLUME=<volser>, DEV-TYPE=<tape-device>)
/ADD-FILE-LINK LINK-NAME=EDTSAM, FILE-NAME=SRVnnn.LIBS, -
/ SUPPORT=*TAPE(FILE-SEQ=3), ACC-METH=*BY-CAT, -
/ BUF-LEN=*BY-CAT, REC-FORM=*BY-CAT, REC-SIZE=*BY-CAT
/START-EDT
@READ '/'
@SYSTEM 'REMOVE-FILE-LINK EDTSAM'
@SYSTEM 'EXPORT-FILE FILE-NAME=SRVnnn.LIBS'
@WRITE 'SRVnnn.LIBS'
@HALT
/ASS-SYSDTA SRVnnn.LIBS
/MOD-JOB-SW ON=1
/START-PROG $LMS
/MOD-JOB-SW OFF=1
/ASS-SYSDTA *PRIMARY

<tape-device> = device-type of the tape, e.g. TAPE-C4
<volser> = VOLSER of tape (see Software AG Product Delivery Report)
```

2 Copy the procedure COPY.PROC from medium to disk

Call the procedure P.COPYTAPE in the library SRV*nnn*.LIB to copy the procedure COPY.PROC to disk:

```
/CALL-PROCEDURE (SRVnnn.LIB,P.COPYTAPE), -
/ (VSNT=<volser>, DEVT=<tape-device>)
```

If you use a TAPE-C4 device, you can omit the parameter `DEVT`.

3 Copy all product files from medium to disk

Enter the procedure COPY.PROC to copy all Software AG product files from medium to disk:

```
/ENTER-PROCEDURE COPY.PROC, DEVT=<tape-device>
```

If you use a TAPE-C4 device, you can omit the parameter `DEVT`. The result of this procedure is written to the file L.REPORT.SRV.

Installation Procedure

Following is the general Adabas System Coordinator installation procedure. The actual installation depends on your particular requirements and the specific contents of the release package provided by Software AG for your site. Information in the release package is intended for your system. If that information differs from the information in this section, use the release package information or contact Software AG technical support for assistance.

Step 1: Load (INPL) the SYSCOR Application (Job I061)

Use sample job CORI061 to load the SYSCOR online administration and error messages file into Natural.

Step 2: Load the Configuration File and Prepare SYSCOR (Job I050)

System Coordinator and related products operate according to definitions contained in the configuration file. You must allocate a new Adabas file for the Version 8.1 configuration file and load COR*vrl*.SYSF into it using the supplied sample job CORI050. The online services will guide you through the steps required to make the new file ready for use, including conversion from previous versions of System Coordinator.

To load the configuration file

1 Load the Adabas System Coordinator configuration file from the distribution medium using the standard Adabas load utility ADALOD. Use sample job CORI050. If you are using an alternate configuration file you need to run this job to initialize both files.

2 If Natural Security is installed, define the libraries SYSCOR and SYSMP*vrs* (where *vrs* is the version you are installing, for example 812) and protect as required. You may define MENU as the startup transaction for SYSCOR. DO NOT define a startup transaction for SYSMP*vrs*.

3 Use the following parameter to define the Natural session where SYSCOR is to be used:

```
LFILE=(152,dbid,fnr<,passw><,ciph>)
```

where *dbid* and *fnr* define the primary Adabas System Coordinator file.

Alternatively, assemble the Natural parameter module with:

```
NTFILE ,ID=152,DBID=dbid,FNR=fnr
```

To convert a previous version's definitions to version 8 format

1 Logon to library SYSCOR and enter `MENU`. SYSCOR will detect that the configuration file is new and will guide you through the steps required to copy and convert the definitions from a previous version.

2 Repeat this procedure for each configuration file to be converted. The procedure only needs to be done once for each configuration file, regardless of how many products use it. Other products may have additional conversion requirements.

Step 3: Assemble the Configuration Module (Job I055)

Adabas System Coordinator parameters are located in the configuration file. At job start, the Adabas System Coordinator needs to know the location of this file. This information is kept in the configuration module.

Create the configuration module by assembling the `CORMCFG` parameters defining the database and file number of the Adabas System Coordinator configuration file.

Keyword	Description
DBID=	Database number for the System Coordinator configuration file
FNR=	File number for the System Coordinator configuration file
ADBID=	Database number for the alternate System Coordinator configuration file. If not specified, an alternate file will not be used.
AFNR=	File number for the alternate System Coordinator configuration file. If not specified, an alternate file will not be used.
SF148=WAIT	Use this keyword if you want client jobs to wait when the specified configuration file is not active. If you omit this keyword, the `RETRY=` setting takes effect (see below).
CRITICAL=	Use this keyword if you want System Coordinator to check for availability and correct functioning of supported add-on products. You may specify one or more of the following, separated by commas: ■ AVI -Adabas Vista ■ AFP - Adabas Fastpath ■ ATM - Adabas Transaction Manager

Keyword	Description
	If any critical product is not functioning correctly, all Adabas requests will be rejected with response code 101, subcode 59.
DMWAIT=	Specifies a maximum time (in minutes) that the System Coordinator daemon will wait for the configuration file database to be activated. If not specified, the daemon will wait indefinitely. The default is 60.
RETRY=	`RETRY` specifies the frequency (number of Adabas calls issued in this client job) at which System Coordinator in the client job will retry access to its configuration file after a response 148. The default is 1000. Client services provided by System Coordinator and its supported add-on products are not available until the configuration file becomes active. `RETRY` only takes effect if `SF148=WAIT` has not been specified.

Name the resulting load module CORCFG (this is required).

Use sample job CORI055.

Step 4: Add the System Coordinator to the Adabas Client (Jobs I060, I080x)

Link the appropriate Adabas System Coordinator client component with your Adabas link modules.

The client components are called CORS2*n* where *n* is a subsystem suffix.

Note: The resulting COR-enabled Adabas link components are for use by client jobs only.

To enable the Adabas System Coordinator client process make the following available (BLSLIB*nn*):

- the COR-enabled Adabas link components;
- the generated configuration module CORCFG; and
- the Adabas System Coordinator load library.

If you are migrating from a previous version, you must ensure that you use the new load library modules. It is not possible to use the Version 8 link module stub with Coordinator modules from a previous version.

Job Type	Stub Module	Sample Job	Natural Link Job
Batch	CORS21	CORI060	LNATBAT
TIAM	CORS21	CORI060	LNRTFRNT
UTM	CORS26	CORI080B	LNUTFRNT

Note: If you are installing System Coordinator for use with Adabas Version 7.4, the sample jobs must be modified to include module ADAL2P. The INCLUDE statement for this module is supplied in the sample jobs as a comment statement.

Note: The stub module can be added directly to the Natural link job (see the appropriate name in above table,) instead of creating an additional link job.

Step 5: Define an Adabas System Coordinator Group

Define an Adabas System Coordinator group and members. This is required if you intend to use:

- Adabas Fastpath
- Adabas Vista or Adabas Fastpath with UTM with dynamic transaction routing.

For more information, refer the section SYSCOR Administration.

Step 6: Create Startup Procedures for the System Coordinator Servers

The following is a job example for running a Adabas System Coordinator daemon:

```
/.SYSCO LOGON
/ ASSIGN-SYSLST L.SYSCO
/ ASSIGN-SYSOUT O.SYSCO
/ MOD-JOB-OPT LOG=(LIST=*YES)
/ SHOW-JOB-STATUS
/ REMARK +-----------------------------------------------------+
/ REMARK I CREATE SYSCO PARAMETER FILE (SYSCO.DDCARD) I
/ REMARK +-----------------------------------------------------+
/ MOD-JOB-SW ON=(4,5)
/ DELETE-FILE SYSCO.DDCARD,SUPPRESS-ERRORS=DMSO533
/ START-EDT
@ CR 1'MPMWTO=YES'
@ CR 2'PRODUCT=CAS'
@ CR 3'TIMER=10'
@ WR 'SYSCO.DDCARD'
@ HALT
/ REMARK +-----------------------------------------------------+
/ REMARK I CREATE ADALNK PARAMETER FILE (SYSCO.DDLNKPAR) I
/ REMARK +-----------------------------------------------------+
/ DELETE-FILE SYSCO.DDLNKPAR,SUPPRESS-ERRORS=DMSO533
/ START-EDT
@ CR 1'ADALNK IDTNAME=idtname'
@ CR 2'ADALNK DBID=dbid'
@ WR 'SYSCO.DDLNKPAR'
@ HALT
/ MOD-JOB-SW OFF=(4,5)
/ REMARK +-----------------------------------------------------+
/ ADD-FILE-LINK DDLIB, $SAG.ADAvrs.MOD
/ ADD-FILE-LINK BLSLIB01, $SAG.ADAvrs.MOD
/ ADD-FILE-LINK BLSLIB02, $SAG.CORvrs.MOD
/ ADD-FILE-LINK DDCARD, SYSCO.DDCARD
/ ADD-FILE-LINK DDLNKPAR, SYSCO.DDLNKPAR
```

```
/ REMARK +-----------------------------------------------------+
/ REMARK I START-PROG SYSCO I
/ REMARK +-----------------------------------------------------+
/ START-PROG *MOD($SAG.CORvrs.MOD,ELEM=SYSCO,PROG-MODE=ANY)
/LOGOFF
```

If SYSCO terminates abnormally, it may be necessary to specify `FORCE=YES` on restart.

Step 7: Define Runtime Controls for Client Jobs and TP Systems

System Coordinator can be installed for all client jobs, but will be inactive until runtime controls are defined. Controls are defined in the SYSCOR Natural application, using the Maintenance menu. Refer to the *Online Services* section for further information.

Alternatively, you can delay this task until you have installed the appropriate add-on product(s). You may then use any of the supplied maintenance applications (SYSAFP, SYSAVI or SYSATM).

9 Verifying the Installation

At the end of the installation process, you can use Adabas System Coordinator Online Services (SYSCOR) to check for successful initialization.

Verify Client Component

Client component installation can be verified by performing the following steps:

To verify client component installation:

1 Log on to SYSCOR and select option 3 from the main menu.

2 From the Special Services menu, select option 1 to verify that the Adabas System Coordinator is correctly installed.

A message is displayed confirming successful verification.

If an error occurs, various messages may be displayed; for more information, see the section Messages and Codes. The following are the most likely causes of an error:

- The Adabas client (link module) in use does not include the Adabas System Coordinator client component CORS*nn*.
- The Adabas System Coordinator kernel phase (module) CORKRN is not available to the job.

Verify Adabas System Coordinator Daemon Communication

This step is only required if you intend to use the Adabas System Coordinator daemon to manage clustered applications.

To verify Adabas System Coordinator communication:

1 Define the System Coordinator group and member(s) for the daemon(s) you are running. For more information, refer to the section SYSCOR Administration.

2 Define a job parameter for the clustered application, specifying the group name defined in step (1).

3 Start the required Adabas System Coordinator daemon(s).

4 Start, or restart, the clustered TP application.

5 Log on to SYSCOR and select option 2 from the Special Services menu to verify that a clustered TP application can communicate with its Adabas System Coordinator daemon.

A message is displayed confirming successful communication.

Verify the Database Component

To verify the database component:

1 Modify the database startup job control to include the load library containing the Adabas System Coordinator kernel module CORKRN.

2 Modify the database startup parameters to include `FASTPATH=YES, VISTA=YES`, or both.

3 Start the database.

The following message is displayed on startup:

POP000I Adapop Vv.r.s initialised, EP=address1 CIB=address2