# Adabas System Coordinator

## Adabas System Coordinator Installation

Version 8.1.2

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Adabas System Coordinator

This document applies to Adabas System Coordinator Version 8.1.2 and to all subsequent releases.

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

# Table of Contents

# 1 Adabas System Coordinator Installation

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 tape 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 tape contains several files. Always refer to the Report of Tape Creation and Release Notes that accompany the tape for specific information that may modify the general installation procedures described here.

# 2 Installation Prerequisites

## Operating Systems

Adabas System Coordinator Version 8.1.2 is compatible with the following operating system environments:

- z/OS
- z/VSE
- BS2000

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

**Note:** When used to support dynamic transaction routing across multiple systems, Adabas System Coordinator requires an operational IBM parallel Sysplex environment, and uses a Coupling Facility cache structure. No other Coupling Facility resources are required.

## Adabas

Adabas System Coordinator can be used with any supported level of Adabas Version 7.4 or above. Refer to the Adabas documentation for more information.

**Note:** When used with Adabas Version 7.4, the supplied COR812.LX01 library is required. This contains the COR Version 8.1 database components (ADAPOx, AFPADA, AVIADA). This library must be added to the start of the load library concatenation in all database startup procedures, replacing the equivalent modules in the Adabas Version 7.4 library.

**Note:** For BS2000 installations: when used with Adabas Version 7.4, The COR812.LX01 library must be named in the ADD-FILE-LINK statements for the DDLIB and the BLSLIB00 file links.

## Natural

Natural is required by the Online Services application SYSCOR.

Any supported level of Natural Version 4.1 or above can be used. Refer to the Natural documentation for more information.

# 3 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.
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 Version 8 Link Modules

System Coordinator Version 8 is compatible with Version 7 and Version 8 link modules. For Version 7, System Coordinator is activated by linking a stub module with the link module. For Version 8, the Coordinator stub module must be linked 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 stub is incorrectly linked.

**Note:** The LNKGBLS module is not used in BS2000 systems. The Coordinator stub is linked with ADALNK.

**Note:** Adabas client-based products are not compatible with the Adabas DBID/SVC routing feature. If you wish to use multiple SVCs in the same client job you should implement the COR versioning feature instead.

## 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 servers.

You must still ensure that you use an unmodified ADALNK in Adabas utility jobs.

# 4 Installation Procedure

This section describes the procedure for Adabas System Coordinator installation:

- **z/OS Installation**
- **z/VSE Installation**
- **BS2000 Installation**

# 5 z/OS Installation

## The Installation Tape

Review the *Report of Tape Creation* that accompanies the release package before restoring the release data to disk. Information in this report supersedes the information in this documentation.

The installation tape contains the following datasets in the sequence indicated in the report:

| Dataset | 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*.LX01 | When used with Adabas Version 7.4, the supplied COR*vrs*.LX01 library is required. This contains the COR Version 8.1 database components (ADAPOx, AFPADA, AVIADA). This library must be added to the start of the load library concatenation in all database startup procedures, replacing the equivalent modules in the Adabas Version 7.4 library. If the Adabas nucleus is running with APF-authorization the LX01 library must also be APF-authorized. |

where *vrs* in dataset names represents the version, revision, and system maintenance level of the product.

## Installation Overview

The steps needed for a successful installation are as follows:

| Step | Description | Required | Job Name |
|---|---|---|---|
| 1 | Restore the libraries from the installation tape | 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 (for Version 8 Adalnks) CORI0607, CORI070x (for Version 7 Adalnks) |

| Step | Description | Required | Job Name |
|---|---|---|---|
| 6 | Define the System Coordinator group and members | Required if a COR daemon is to be used | |
| 7 | Install the CICS node error program (optional) | Optional | |
| 8 | Add cache structure(s) to the CFRM policy | Required if cross-system DTR is to be used. | |
| 9 | Create startup procedures for the Adabas System Coordinator daemons | Required if a COR daemon is to be used | |
| 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.

If cross-system Dynamic Transaction Routing (DTR) is to be supported, a coupling facility cache structure must be defined. The cache structure name is defined in the coordination group definition as well as in the CFRM policy of the sysplex environment.

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 Tape 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 Tape to Disk
- Step 1b: Modify COPY.JOB
- Step 1c: Submit COPY.JOB

**Note:** If the datasets for more than one product are delivered on the tape, the dataset COPY.JOB contains the JCL to unload the datasets for all delivered products from the tape 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 Tape to Disk

The data set COPY.JOB (label 2) contains the JCL to unload all other existing data sets from tape 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 tape 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 8.1 configuration file and load CORvrl.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 tape 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 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:<br>■ AVI - AdabasVista<br>■ AFP - Adabas Fastpath<br>■ ATM - Adabas Transaction Manager<br>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. |

| Keyword | Description |
|---|---|
| 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.<br><br>The default, ABEND, produces a standard operating system dump to SYSUDUMP, SYSABEND or SYSMDUMP.<br><br>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.<br><br>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, I070x, I080x)

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

The stub modules are called CORS0*n* where *n* is a subsystem suffix.

The modified link module is 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.

The load library contains the kernel modules CORKRN and CASKRN, which must also be available to all client jobs that will use the Adabas System Coordinator.

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. If you need to run multiple versions in a TP monitor client, please see the Versioning Tool section for more information.

| Job Type | Stub Module | Sample Job |
|---|---|---|
| Batch/TSO | CORS01 | CORI060 (Version 8 link), CORI0607 (Version 7 Link) |
| Com-plete | CORS02 | CORI080C (Version 8 link), CORI070C (Version 7 Link) |
| CICS Command Level | CORS03 | CORI080B (Version 8 link), CORI070B (Version 7 Link)<br>**Note:** If you are installing under CICS, the Coordinator modules can be loaded either from the DFHRPL or the STEPLIB libraries. Software AG recommends that you use DFHRPL. 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.<br>A sample job, CORI080R, is supplied in the installation JOBS library.<br>**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. |
| IMS | CORS05 | CORI080G (Version 8 link), CORI070G (Version 7 link) |
| Multi-task Batch (NIM TP Monitor) | CORS07 | CORI080H (Version 8 link), CORI070H (Version 7 link)<br>**Note:** For a multi-tasking batch job, the client component (CORS07) must be linked with the reentrant link module (ADALNKR). |
| Triggers and Stored Procedures | CORS08 | CORI080S.J (Version 8 link), CORI070S.J (Version 7 link) |
| Adabas SQL Gateway | CORS07,CORLNKR | CORI080H (Version 8 link), CORI070H (Version 7 link)<br>**Note:** See section **Installing the Adabas System Coordinator with the Adabas SQL Gateway in z/OS**. |

### 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 AD-AGSET (Version 7 link module) or LGBLSET (Version 8 link module) macro.

**Note:** CORNEP must be called only from DFHZNEP.

### Step 8: Add the Cache Structure(s) to the CFRM Policy

**Note:** This step is required if you intend to run clustered applications with dynamic transaction routing in an IBM sysplex environment.

Run a job similar to the following example to update the CFRM administrative policy data in the COUPLE dataset:

```
//STEP20 EXEC PGM=IXCMIAPU
//SYSPRINT DD SYSOUT=A
//SYSABEND DD SYSOUT=A
//SYSIN DD *
 DATA TYPE(CFRM) REPORT(YES)
 DEFINE POLICY NAME(POLICY1) REPLACE(YES)
 CF NAME(CF)
 TYPE(009674)
 MFG(IBM)
 PLANT(02)
 SEQUENCE(000000040101)
 PARTITION(1)
 CPCID(00)
 DUMPSPACE(2000)
 .
```

```
.
STRUCTURE NAME(xxxxxxxxx)
SIZE(500)
INITSIZE(10)
PREFLIST(
```

—where

| Parameter | Is the . . . |
|---|---|
| STRUCTURE NAME | Cache structure name, which must match the name specified in the Adabas System Coordinator group definition. |
| SIZE | Maximum size for the cache structure in the coupling facility. Calculate this by determining the maximum number of concurrent users of the clustered applications (CICS, IMS, etc) that will use this coupling facility. Each user will require approximately 256 bytes of cache memory. |
| INITSIZE | Initial size for the cache structure in the coupling facility. Use this together with the SIZE parameter to manage the difference between the average and maximum user sessions to be supported in coupling facility memory. |

### Step 9: 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 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 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.

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

- Not authorized (basic multi-thread install): When the Adabas SQL Gateway runs without APF authorization it is unable to activate its RACF interface
- APF authorized (authorized multi-thread install): In its authorized state the Adabas SQL Gateway can activate its RACF interface

### Basic Multi-Thread Install

Multi-thread applications in z/OS that use ADALNKR, like the Adabas SQL Gateway must use the appropriate Adabas System Coordinator interface module, CORS07, not CORS01 as is usually done for batch-style jobs.

**for this type of operation:**

1 you must link-edit the following modules together with the RENT attribute to produce the module named CNXADA0B:

- From ACE: CNXADA0B.
- From ADA: ADALNKR. This will probably have been included in CNXADA0B during SQL Gateway installation, so it should not be necessary to include it again. Check the link-edit output to ensure ADALNKR is included.
- From COR: CORS07

2 Define the SQL Gateway started task as job type multi-TCB to the desired product(s) in the appropriate administration center: Adabas Fastpath (SYSAFP), Adabas Vista (SYSAVI) and/or Adabas Transaction manager (SYSATM).

### Authorized Multi-Thread Install

Where authorization is required it is *mandatory* that a front-end to CORS07 (see Basic Multi-Thread Install above) is put in place, otherwise a failure (S0C4) occurs.

**for this type of operation:**

1 you must link-edit the following modules together with the RENT attribute to produce the module named CNXADA0B:

- From ACE: CNXADA0B. If ADALNKR has already been included in CNXADA0B, a link-edit REPLACE statement must be used to delete it. Check the link-edit output to ensure ADALNKR is not included.
- From COR: CORLNKR

2 You must also link-edit the following modules together with the NORENT, REUS attribute to produce the module named ADALNKR:

- From ADA: ADALNKR
- From COR: CORS07

3 Define the SQL Gateway started task as job type multi-TCB to the desired product(s) in the appropriate administration center: Adabas Fastpath (SYSAFP), Adabas Vista (SYSAVI) and/or Adabas Transaction manager (SYSATM).

# 6 z/VSE Installation

## The Installation Tape

Review the *Report of Tape Creation* that accompanies the release package before restoring the release data to disk. Information in this report supersedes the information in this documentation.

The installation tape contains the following datasets in the sequence indicated in the report:

| Dataset | 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 |

where *vrs* in dataset names represents the version, revision, and system maintenance level of the product.

## Installation Overview

The steps needed for a successful installation are as follows:

| Step | Description | Required | Job Name |
|---|---|---|---|
| 1 | Restore the libraries from the installation tape | 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 | |
| 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 Tape

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* | tape unit number |
| *tttttt* | volume serial number of the installation tape |
| *vrs* | version, revision, and system maintenance level |
| *xx* | file spacing information; see the Report of Tape Creation |

```
* $$ JOB JNM=LIBREST,CLASS=O,DISP=D
* $$ 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 kernel phases CORKRN and CASKRN, 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 tape 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. |
| 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:<br>■ AVI -Adabas Vista<br>■ AFP - Adabas Fastpath<br>■ ATM - Adabas Transaction Manager<br>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 stub modules are called CORS1*n* where *n* is a subsystem suffix.

The modified link module is 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.

The load library contains the kernel modules CORKRN and CASKRN, which must also be available to all client jobs that will use the Adabas System Coordinator.

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 |
|---|---|---|
| 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)<br>**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.<br>**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. |
| 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 tape 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 AD-AGSET (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 SYSC01
/&
* ¢¢ 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).

# 7 BS2000 Installation

## The Installation Tape

Review the *Report of Tape Creation* that accompanies the release package before restoring the release data to disk. Information in this report supersedes the information in this documentation.

The installation tape contains the following datasets in the sequence indicated in the report:

| Dataset | 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 |

where *vrs* in dataset names represents the version, revision, and system maintenance level of the product.

## Installation Checklist

After copying the tape 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 |
| 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

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.

Multiple jobs (UTM jobs, for example) defined in the Adabas System Coordinator groups use subpools allocated from a shared memory pool. For BS2000, Adabas System Coordinator requires that you specify the virtual start address and size of the shared pool. This is done when the Coordinator Group is set up in the SYSCOR administration application. The start address selected must be valid in all UTM jobs that will use Adabas System Coordinator, and also in the Adabas System Coordinator daemon task. Ensure that the address spaces defined are large enough to accommodate the defined memory pool.

Adabas System Coordinator requires approximately 256 bytes of shared memory for each user session active in a Client job. Additional memory will be required, depending on the options that have been installed. For more information, refer to the installation documentation for the Adabas options.

## Copying the Tape Contents to a BS2000/OSD Disk

**To copy the tape contents to a BS2000/OSD disk:**

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

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

The library SRV*nnn*.LIB is stored on the tape as the sequential file SRV*nnn*.LIBS containing LMS commands. The current version nnn can be obtained from the Report of Tape Creation. 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 Report of Tape Creation)
```

2 Copy the procedure COPY.PROC from tape 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 tape to disk

Enter the procedure COPY.PROC to copy all Software AG product files from tape 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 CORvrl.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 tape 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:<br>■ AVI -Adabas Vista<br>■ AFP - Adabas Fastpath<br>■ ATM - Adabas Transaction Manager<br>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 stub modules are called CORS2*n* where *n* is a subsystem suffix.

The modified link module is for use by client jobs only.

The load library contains the kernel modules CORKRN and CASKRN, which must also be available to all client jobs that will use the Adabas System Coordinator.

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=DMS0533
/ 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=DMS0533
/ 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).

# 8 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 INITIALIZED