Adabas Transaction Manager

Adabas Transaction Manager Installation

ADABAS & NATURAL

Table of Contents

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 (...).

Online Information and Support

Software AG Documentation Website

You can find documentation on the Software AG Documentation website at **https://documentation.softwareag.com**.

Software AG Empower Product Support Website

If you do not yet have an account for Empower, send an email to empower@softwareag.com with your name, company, and company email address and request an account.

Once you have an account, you can open Support Incidents online via the eService section of Empower at **https://empower.softwareag.com/**.

You can find product information on the Software AG Empower Product Support website at **https://empower.softwareag.com**.

To submit feature/enhancement requests, get information about product availability, and download products, go to **Products**.

To get information about fixes and to read early warnings, technical papers, and knowledge base articles, go to the **Knowledge Center**.

If you have any questions, you can find a local or toll-free number for your country in our Global Support Contact Directory at **https://empower.softwareag.com/public_directory.aspx** and give us a call.

Software AG Tech Community

You can find documentation and other technical information on the Software AG Tech Community website at **https://techcommunity.softwareag.com**. You can:

- Access product documentation, if you have Tech Community credentials. If you do not, you will need to register and specify "Documentation" as an area of interest.

- Access articles, code samples, demos, and tutorials.

- Use the online discussion forums, moderated by Software AG professionals, to ask questions, discuss best practices, and learn how other customers are using Software AG technology.

- Link to external websites that discuss open standards and web technology.

Data Protection

Software AG products provide functionality with respect to processing of personal data according to the EU General Data Protection Regulation (GDPR). Where applicable, appropriate steps are documented in the respective administration documentation.

2 Adabas Transaction Manager Installation

This document describes how to install Adabas Transaction Manager.

⚠️ **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.

The Adabas Transaction Manager installation jobs can be created manually or generated by the Software AG System Maintenance Aid (SMA).

For each step of the installation procedure described later in this section, a job number may be used to represent a task. This job number refers to an installation job generated by SMA. If you are not using SMA, an example job with this same number which you must adapt to your site requirements is provided in the job library on the Adabas Transaction Manager installation medium.

For information about using System Maintenance Aid for the installation process, refer to the *System Maintenance Aid* documentation.

Installation Prerequisites
Before You Install
Installation Procedures
Verifying the Installation

3 Installation Prerequisites

This section describes the prerequisites for Adabas Transaction Manager Version 8.2.

Operating Systems

Adabas Transaction Manager is compatible with the following operating systems:

- 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 web page.

Software Prerequisites

- Adabas
- Adabas System Coordinator
- Entire Net-Work
- Using Com-plete
- Using RRMS and CICS Syncpoint Manager
- Natural

Adabas

Adabas Vista 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.

Refer to the Adabas documentation for more information.

The following table shows the dataset definitions that are essential for correct execution of a single database or cluster that is to execute as a resource manager, under the transactional control of ATM. Other datasets, such as command log, may be specified. For details of these, refer to the Adabas documentation.

Dataset	Link Name	More Information
Load library		ADA library COR library ATM library **Note:** Check the *Release Notes* for details of any special dependencies.
Associator	DDASSORn	
Data Storage	DDDATARn	
Work	DDWORKR1	
Work part 4	DDWORKR4	Recoverable information about global transactions. **Note:** Check the *Release Notes* for details of any special dependencies.
ADARUN parameters	SYSDTA/ DDCARD	`DTP=RM`, and other operational parameters
ADARUN messages	SYSOUT/ DDPRINT	

Adabas System Coordinator

Adabas Transaction Manager requires that you first install the Adabas System Coordinator. Refer to the Adabas System Coordinator documentation for more information.

The following table shows the dataset definitions that are essential for correct execution of the ATM transaction manager running as a service within the Adabas System Coordinator daemon.

Dataset	Link Name	More Information
Load library		ATM library **Note:** Check the *Release Notes* for details of any special dependencies.

Control statements	SYSDTA/ DDCARD	`PRODUCT=ATM,`
		
		`NC=mmm`
		
		`NABS=nnn`
		and other operational parameters.
		
		Note: If upgrading from an earlier version of Adabas Transaction Manager, the NC and NABS parameter values should be (at least) similar to those used by the existing TM. If this is a new installation, these values should reflect those of the busiest transactional database which Adabas Transaction Manager will be asked to coordinate.

Messages	SYSOUT/ DDPRINT	

Dataset	Link Name	More Information
ATM Recovery File	TMRFI	Refer to the Adabas Transaction Manager Installation Procedures for details on how to prepare the recovery file.

Entire Net-Work

A supported version of Entire Net-Work is required for communication between Adabas Transaction Manager instances in different system images. Refer to the Entire Net-Work documentation for more information.

Using Com-plete

The Adabas Transaction Manager client proxy currently supports only one Adabas SVC per client session under Com-plete.

Using RRMS and CICS Syncpoint Manager

For cross-vendor coordination of distributed transactions, Adabas Transaction Manager supports the following IBM asynchronous exit drivers: RRMS and CICS Syncpoint Manager.

Natural

Natural is required by the Online Services application SYSATM. Any supported level of Natural can be used.

Refer to the Natural documentation for more information.

4   Before You Install

This section describes actions which must be taken prior to performing Adabas Transaction Manager installation.

Adabas System Coordinator

Before you start to install Adabas Transaction Manager, you must have already installed the Adabas System Coordinator. Adabas Transaction Manager uses the configuration file which is maintained by the Adabas System Coordinator.

Use of Unmodified ADALNK

For the requirements regarding the use of an unmodified ADALNK batch link routine refer to the corresponding information in the *Before You Install* section of the *Installation* chapter for *Adabas System Coordinator*.

Installation Under CICS

If you are installing under CICS, the Adabas Transaction Manager 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 Adabas Transaction client modules (ATMKRN, ATMPXY) 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.

Please also refer to the *Adabas System Coordinator Installation* documentation for similar CICS requirements for that software component.

5 Installation Procedure

This section describes the procedure for Adabas Transaction Manager installation:

Installation for z/OS

Installing Adabas Transaction Manager for z/OS

Installing CICS Resource Manager Interface for z/OS

Installing RRMS Interface for z/OS

Installation for VSE/ESA

Installing Adabas Transaction Manager for z/VSE

Installing CICS Resource Manager Interface for z/VSE

Installation for BS2000

Installing Adabas Transaction Manager for BS2000

6 Installing Adabas Transaction Manager for z/OS

The Installation Medium

Review the *Software AG Product Delivery Report* that accompanies the release package before restoring the release data to disk.

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

Data Set	Contents
ATM*vrs*.JOBS	Installation jobs, utility jobs
ATM*vrs*.LOAD	Executable modules
ATM*vrs*.INPL	Online Services application
ATM*vrs*.ERRN	Online Services messages

where *vrs* is the version, revision, and system maintenance level of the product.

Installation Checklist

The Adabas System Coordinator must be installed prior to the installation of Adabas Transaction Manager. See the Adabas System Coordinator documentation for detailed information.

Once the required System Coordinator components have been installed, you can proceed to install Adabas Transaction Manager. The following checklist identifies the steps necessary to complete the installation:

Step	Description
1	Restore the Adabas Transaction Manager libraries from the installation medium
2	Prepare SYSATM
3	Enable the client process
4	Enable the database process for two-phase commit
5	Prepare the recovery file
6	Enable the Transaction Manager to run as a Service within Adabas System Coordinator daemons
7	Verify the installation

Installation Procedure

Following is the general Adabas Transaction Manager 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 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: Prepare SYSATM

The Adabas Transaction Manager Online Services (SYSATM) objects are delivered on the Adabas Transaction Manager distribution medium.

≫ **To prepare SYSATM:**

1   Use your everyday Natural INPL job to load the administration tool (Natural application SYSATM) and associated message texts into your Natural system. For reference a sample Natural INPL job called CORI061 can be found with the sibling System Coordinator product in the jobs distribution file. The INPL job's work file 1 must reference the distribution file ATM*vrs*.INPL and work file 2 must reference ATM*vrs*.ERRN.

   > **Note:** If you use Natural Security in this system, define the libraries SYSATM and SYSMT*vrs* (where vrs is the level you are installing) and protect as you require. You may define MENU as the startup transaction for SYSATM. However, you must not define a startup transaction for SYSMT*vrs*.

2   Use the following parameter to define the Natural session where SYSATM is to be used:

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

where *dbid* and *fnr* define the location of the Adabas System Coordinator configuration file.

Alternatively, assemble the Natural parameter module with

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

Step 3: Enable the Client Process

≫ **To enable the Adabas Transaction Manager client process:**

1   For the Adabas System Coordinator:

- make the modified Adabas link module available (COMPLIB for Com-plete, DFHRPL for CICS, STEPLIB for all other client systems);

- make the generated configuration module CORCFG available (COMPLIB for Com-plete, STEPLIB for all other client systems); and

- make the Adabas System Coordinator load library available (COMPLIB for Com-plete, STEPLIB for all other client systems).

2   For Adabas Transaction Manager:

- make the Adabas Transaction Manager load library available (COMPLIB for Com-plete, STEPLIB for all other client systems).

3   For each Client:

- refer to the section Client Runtime Controls for details on how to define the necessary runtime controls to enable a client for transaction management.

Step 4: Enable the Database Process for Two-Phase Commit

≫ **To enable the Adabas Transaction Manager database process for two-phase commit:**

1   For the Adabas System Coordinator:

- make the Adabas System Coordinator load library available.

2   For Adabas Transaction Manager:

- set the Adabas parameter `ADARUN DTP=RM`.
- include a DD statement for DDWORKR4.

Ensure this identifies a suitable WORK dataset which is allocated and formatted in the same way as the main WORK data set. In the case of a Cluster Services or Parallel Services database, the WORK 4 dataset is shared by all members of the cluster.

> ⚠ **Important:** For details about the WORK4 dataset, including information about sizing, please refer to the Adabas documentation, under *Defining an Adabas Database*, which is part of *Database Maintenance Tasks* in the section *DBA Tasks*.

■ make the Adabas Transaction Manager load library available.

> 📄 **Note:** An unmodified ADALNK must be available to the database in preference to the ADALNK created during the installation of the Adabas System Coordinator.

Step 5: Prepare the recovery file

All recovery information is maintained in a single direct access file defined to the Adabas System Coordinator daemon where the transaction manager service runs. The recovery file is shared by all transaction managers operating in the same Adabas System Coordinator group. For reference a sample formatting job called CORI040 can be found with the sibling System Coordinator product in the jobs distribution file. Change the parameters in this sample job with the following considerations:

```
"dsname" (file name)
```

Specify the file name, for example SAG.ATM*vrs.cor-group-name*.TMRFI

```
"nn" (file size in cylinders) and "@@@@" (device type)
```

The minimum block size of the file must be 4096 bytes, and we recommend a minimum size of 13,500 blocks for each transaction manager sharing the file. With reference to the Adabas Device Types and Block sizes section of the DBA Reference Summary, calculate how many cylinders are required for this many blocks based on the device type(s) available at your site. For example, when formatting a file assigned as a WORK component (as defined in the sample job), 13,500 blocks equates to 100 cylinders (*nn*) when using a 3390 device type ("@@@@").

> 📄 **Note:** It is very important that all transaction managers operating within the same Adabas System Coordinator group **share the same recovery file**.

Step 6: Enable the Transaction Manager to run as a Service within Adabas System Coordinator Daemons

≫ **To enable the Transaction Manager to run as a service within Adabas System Coordinator daemons:**

1   set `PRODUCT=ATM` in the parameter input of each System Coordinator daemon within which you wish to run the Transaction Manager.

2   ensure the TM controls are correctly defined for each System Coordinator daemon within which you wish to run the Transaction Manager. Refer to How to maintain TM controls.

3   Make the Adabas Transaction Manager load library available.

4   refer to the section Prerequisites...Adabas System Coordinator for information on the System Coordinator daemon dataset definitions necessary for the correct operation of the Transaction Manager.

> **Note:** An Adabas Transaction Manager must be run in each operating system image that will participate in distributed transaction processing (DTP). If more than one Adabas SVC is used in the same system image, an Adabas Transaction Manager must be run under each Adabas SVC that will participate in DTP.

Step 7: Verify the Installation

Use the procedure described in section **Verifying the Installation** to ensure that the installation has been successful.

7 Installing CICS Resource Manager Interface for z/OS

If you intend to use Adabas Transaction Manager through the CICS Resource Manager Interface (RMI), use the following installation procedure in conjunction with the installation procedure for the Adabas task-related user exit (TRUE) described in the *Adabas Installation for z/OS* documentation.

> **Note:** A supported level of IBM's CICS is needed, with RMI configured in it.

Installation Overview

The steps needed for a successful installation are as follows:

Step	Description
1	Perform the standard installation procedure for Adabas Transaction Manager, and verify the installation.
2	Follow the steps for the installation of the Adabas TRUE.
3	Establish CICS definitions for Adabas Transaction Manager RMI programs.
4	Copy the Adabas Transaction Manager RMI modules into a CICS RPL library.
5	Define client runtime controls for the CICS system.
6	Activate the Adabas Transaction Manager CICS Resource Manager Interface (RMI).

Installation Procedure

The following is the general RMI installation procedure. All steps are required for a successful installation.

Step 1: Install Adabas Transaction Manager

Install and verify the execution of the transaction manager and client proxy without activating the RMI.

Step 2: Install the Adabas TRUE

This process is fully described in the *Adabas Installation for z/OS*.

> **Note:** When using the LGBLSET macro to set installation values for the Adabas TRUE ensure the parameter `RMI=YES` is specified.

Step 3: Establish CICS Definitions for the RMI Programs

≫ **To establish CICS definitions for the RMI programs:**

■ For sites that require predefined CICS definitions a copy of what is needed for Adabas Transaction Manager is provided in member CORI080R in the System Coordinator JOBS library.

> **Note:** If storage protection is active in your CICS system, EXECKEY(CICS) should be specified for the PROGRAM definitions.

Step 4: Copy RMI Modules into a CICS RPL library

The following programs, supplied in the Adabas Transaction Manager load library, must be made available in the DFHRPL DD concatenation of your CICS JCL procedure:

ATMRMIRS

Step 5: Define Client Runtime Controls for CICS

Use Adabas Transaction Manager Online Services to define the required client runtime controls for the CICS job.

The required client runtime controls are described in section Parameters. Some special considerations are necessary when running with the RMI active. Define a set of client runtime controls for the CICS job. Pay particular attention to the `Open distributed transaction support`, Adabas transaction dynamics and Transaction control by other vendors, as well as the Transaction control by 'cc' client controls.

Step 6: Activate CICS Resource Manager Interface

≫ **To activate the CICS Resource Manager Interface:**

1   Ensure that the Adabas System Coordinator daemon, within which the Adabas Transaction Manager is running, is active.

2   Start CICS.

8   Installing RRMS Interface Under z/OS

If you intend to use Adabas Transaction Manager in conjunction with the Recoverable Resource Management Services (RRMS), use the following installation procedure.

Installation Checklist

The steps needed for a successful installation are as follows:

Step	Description
1	Perform standard installation procedure for Adabas Transaction Manager, and verify the installation.
2	Copy the Adabas Transaction Manager RRMS exits into an LPA library.
3	Link the RRMS interface modules to the Adabas Transaction Manager kernel (job ATMI070).
4	Define client runtime controls for the jobs, Com-plete systems, and IMS systems whose transactions will be controlled by RRS.
5	Verify the system logger and RRS operation.
6	Activate the Adabas Transaction Manager RRMS interface.

Installation Procedure

The following is the general procedure for installing the Adabas Transaction Manager RRMS interface. All steps are required for a successful installation.

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: Install Adabas Transaction Manager

It is strongly recommended that you first install and verify the execution of the ATM transaction manager and client proxy without activating the RRMS interface.

Step 2: Copy RRMS Exits into an LPA Library

The Adabas Transaction Manager RRMS exits are contained in the single module ATMRRSEX, which is supplied in the Adabas Transaction Manager load library.

This module must be made available in the LPA of your z/OS system. You can use various third-party tools to place ATMRRSEX in the LPA temporarily. For permanent installation, you should copy the module into a library that appears in the system LPALST concatenation, then IPL the system specifying the CLPA option.

If ATMRRSEX is not available in the LPA when Adabas Transaction Manager attempts to initialize its RRMS interface, system ABEND 052 occurs.

Step 3: Link the RRMS Interface Modules to the ATM Kernel (Job ATMI070) (SMA Job I070, Step 4190)

In order for an application's transactions to be coordinated by RRMS, some additional interface modules from IBM must be linked into the Adabas Transaction Manager kernel.

Job ATMI070 can be adapted for this purpose. Unresolved external references can be ignored, provided that the named RRMS modules are included successfully.

Step 4: Create Client Runtime Controls

Use Adabas Transaction Manager Online Services to define the required client runtime controls.

The required client runtime controls are described in section Parameters. Some special considerations are necessary when running with the RRMS interface active. Define a set of client runtime controls for those batch jobs, Com-plete systems, and IMS TM systems that require the transactional control of RRS, and pay particular attention to the Transaction control by other vendors client control.

Step 5: Verify the System Logger and RRS Operation

Ensure that the system logger is active in your z/OS system and that RRS has been started. Refer to the *IBM z/OS* documentation for details.

Step 6: Activate the Adabas Transaction Manager RRMS Interface

≫ **To activate the RRMS Interface:**

1   Ensure the TM control Open distributed transaction (system) is set to YES.

2   Ensure that the Adabas System Coordinator daemon is running with `PRODUCT=ATM`.

9 Installing Adabas Transaction Manager for z/VSE

The Installation Medium

Review the *Software AG Product Delivery Report* that accompanies the release package before restoring the release data to disk.

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

Data Set	Contents
ATM*vrs*.LIBR	Executable modules and sample jobs
ATM*vrs*.INPL	Online Services application
ATM*vrs*.ERRN	Online Services messages

where *vrs* is the version, revision, and system maintenance level of the product. Use the comments in the jobs when modifying them to conform to site requirements.

Installation Checklist

The Adabas System Coordinator must be installed prior to the installation of Adabas Transaction Manager. See the Adabas System Coordinator documentation for detailed information.

Once the required System Coordinator components have been installed, you can proceed to install Adabas Transaction Manager. The following checklist identifies the steps necessary to complete the installation:

Step	Description
1	Restore the Adabas Transaction Manager libraries from the installation medium
2	Prepare SYSATM
3	Enable the client process
4	Enable the database process for two-phase commit
5	Prepare the recovery file
6	Enable the Transaction Manager to run as a Service within Adabas System Coordinator daemons
7	Verify the installation

Installation Procedure

Following is the general Adabas Transaction Manager 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 the Adabas Transaction Manager Libraries

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

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

```
* $$ JOB JNM=LIBREST,CLASS=0,DISP=D
* $$ 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.AVIvrs:SAGLIB.AVIvrs                 -
TAPE=SYS006 TL=tttttt LIST=Y
/*
// MTC REW,SYS006
/&
* $$ EOJ
```

Step 2: Prepare SYSATM

The Adabas Transaction Manager Online Services (SYSATM) objects are delivered on the Adabas Transaction Manager distribution medium.

≫ To prepare SYSATM:

1   Use your everyday Natural INPL job to load the administration tool (Natural application SYSATM) and associated message texts into your Natural system. For reference a sample Natural INPL job called CORI061 can be found with the sibling System Coordinator product in the jobs distribution file. The INPL job's work file 1 must reference the distribution file ATM*vrs*.INPL and work file 2 must reference ATM*vrs*.ERRN.

> **Note:** If you use Natural Security in this system, define the libraries SYSATM and SYSMT*vrs* (where vrs is the level you are installing) and protect as you require. You may define MENU as the startup transaction for SYSATM. However, you must not define a startup transaction for SYSMT*vrs*.

2   Use the following parameter to define the Natural session where SYSATM is to be used:

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

where *dbid* and *fnr* define the location of the Adabas System Coordinator configuration file.

Alternatively, assemble the Natural parameter module with

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

Step 3: Enable the Client Process

≫ To enable the Adabas Transaction Manager client process:

1   For the Adabas System Coordinator:

- make the modified Adabas link module available
- make the generated configuration module CORCFG available, and
- make the Adabas System Coordinator load library available

2   For Adabas Transaction Manager:

- make the Adabas Transaction Manager load library available

3   For each Client:

■ refer to the section Client Runtime Controls for details on how to define the necessary runtime controls to enable a client for transaction management.

Step 4: Enable the Database Process for Two-Phase Commit

≫ **To enable the Adabas Transaction Manager database process for two-phase commit:**

1 For the Adabas System Coordinator:

■ make the Adabas System Coordinator load library available.

2 For Adabas Transaction Manager:

■ set the Adabas parameter `ADARUN DTP=RM`.
■ include a DD statement for DDWORKR4.

Ensure this identifies a suitable WORK dataset which is allocated and formatted in the same way as the main WORK data set. In the case of a Cluster Services or Parallel Services database, the WORK 4 dataset is shared by all members of the cluster.

⚠ **Important:** For details about the WORK4 dataset, including information about sizing, please refer to the Adabas documentation, under *Defining an Adabas Database*, which is part of *Database Maintenance Tasks* in the section *DBA Tasks*.

■ make the Adabas Transaction Manager load library available.

  Note: An unmodified ADALNK must be available to the database in preference to the ADALNK created during the installation of the Adabas System Coordinator.

Step 5: Prepare the recovery file

All recovery information is maintained in a single direct access file defined to the Adabas System Coordinator daemon where the transaction manager service runs. The recovery file is shared by all transaction managers operating in the same Adabas System Coordinator group. For reference a sample formatting job called CORI040 can be found with the sibling System Coordinator product in the jobs distribution file. Change the parameters in this sample job with the following considerations:

```
"dsname" (file name)
```

Specify the file name, for example SAG.ATM*vrs.cor-group-name*.TMRFI

```
"nn" (file size in cylinders) and "@@@@" (device type)
```

The minimum block size of the file must be 4096 bytes, and we recommend a minimum size of 13,500 blocks for each transaction manager sharing the file. With reference to the Adabas Device Types and Block sizes section of the DBA Reference Summary, calculate how many cylinders are required for this many blocks based on the device type(s) available at your site. For example, when formatting a file assigned as a WORK component (as defined in the sample job), 13,500 blocks equates to 100 cylinders (*nn*) when using a 3390 device type (*"@@@@"*).

> **Note:** It is very important that all transaction managers operating within the same Adabas System Coordinator group **share the same recovery file**.

Step 6: Enable the Transaction Manager to run as a Service within Adabas System Coordinator Daemons

≫ **To enable the Transaction Manager to run as a service within Adabas System Coordinator daemons:**

1   set PRODUCT=ATM in the parameter input of each System Coordinator daemon within which you wish to run the Transaction Manager.

2   ensure the TM controls are correctly defined for each System Coordinator daemon within which you wish to run the Transaction Manager. Refer to How to maintain TM controls.

3   Make the Adabas Transaction Manager load library available.

4   refer to the section **Prerequisites...Adabas System Coordinator** for information on the System Coordinator daemon dataset definitions necessary for the correct operation of the Transaction Manager.

> **Note:** An Adabas Transaction Manager must be run in each operating system image that will participate in distributed transaction processing (DTP). If more than one Adabas SVC is used in the same system image, an Adabas Transaction Manager must be run under each Adabas SVC that will participate in DTP.

Step 7: Verify the Installation

Use the procedure described in section **Verifying the Installation** to ensure that the installation has been successful.

10   Installing CICS Resource Manager Interface for z/VSE

If you intend to use Adabas Transaction Manager through the CICS Resource Manager Interface (RMI), use the following installation procedure in conjunction with the installation procedure for the Adabas task-related user exit (TRUE) described in the *Adabas Installation for z/VSE* documentation.

> **Note:** A supported level of IBM's CICS is needed, with RMI configured in it.

Installation Overview

The steps needed for a successful installation are as follows:

Step	Description
1	Perform standard installation procedure for Adabas Transaction Manager, and verify the installation.
2	Follow the steps for the installation of the Adabas TRUE.
3	Establish CICS definitions for Adabas Transaction Manager RMI programs.
4	Copy the Adabas Transaction Manager RMI modules into a CICS RPL library.
5	Define client runtime controls for the CICS system.
6	Activate the Adabas Transaction Manager CICS Resource Manager Interface (RMI).

Installation Procedure

The following is the general RMI installation procedure. All steps are required for a successful installation.

Step 1: Install Adabas Transaction Manager

Install and verify the execution of the transaction manager and client proxy without activating the RMI.

Step 2: Install the Adabas TRUE

This process is fully described in the *Adabas Installation for z/VSE* documentation.

> **Note:** When using the LGBLSET macro to set installation values for the Adabas TRUE ensure the parameter RMI=YES is specified.

Step 3: Establish CICS Definitions for the RMI Programs

≫ **To establish CICS definitions for the RMI programs:**

■ For sites that require predefined CICS definitions a copy of what is needed for Adabas Transaction Manager is provided in member CORI080R in the System Coordinator JOBS library.

> **Note:** If storage protection is active in your CICS system, EXECKEY(CICS) should be specified for the PROGRAM definitions.

Step 4: Copy RMI Modules into a CICS RPL library

The following programs, supplied in the ATM load library, must be made available in the LIBDEF concatenation of your CICS JCL procedure:

ATMRMIRS

Step 5: Define Client Runtime Controls for CICS

Use Adabas Transaction Manager Online Services to define the required client runtime controls for the CICS job.

The required controls are described in section Parameters. Some special considerations are necessary when running with the RMI active. Define a set of client runtime controls for the CICS job. Pay particular attention to the `Open distributed transaction support`, Adabas transaction dynamics and Transaction control by other vendors, as well as the Transaction control by 'cc' client controls.

Step 6: Activate CICS Resource Manager Interface

≫ **To activate the CICS Resource Manager Interface:**

1   Ensure that the Adabas System Coordinator daemon, within which the Adabas Transaction Manager is running, is active

2   Start CICS.

11 Installing Adabas Transaction Manager for BS2000

The Installation Medium

Review the *Software AG Product Delivery Report* that accompanies the release package before restoring the release data to disk.

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

Data Set	Contents
ATM*vrs*.JOBS	Installation jobs, utility jobs
ATM*vrs*.MOD	Executable modules
ATM*vrs*.INPL	Online Services application
ATM*vrs*.ERRN	Online Services messages

where *vrs* is the version, revision, and system maintenance level of the product.

Installation Checklist

The Adabas System Coordinator must be installed prior to the installation of Adabas Transaction Manager. See the Adabas System Coordinator documentation for detailed information.

Once the required System Coordinator components have been installed, you can proceed to install Adabas Transaction Manager. The following checklist identifies the steps necessary to complete the installation:

Step	Description
1	Copy the Medium Contents to a BS2000 Disk
2	Prepare SYSATM
3	Enable the client process
4	Enable the database process for two-phase commit
5	Prepare the recovery file
6	Enable the Transaction Manager to run as a Service within Adabas System Coordinator daemons
7	Verify the installation

Installation Procedure

Following is the general Adabas Transaction Manager 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: Copy 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=9), 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.

Step 2: Prepare SYSATM

The Adabas Transaction Manager Online Services (SYSATM) objects are delivered on the Adabas Transaction Manager distribution medium.

≫ To prepare SYSATM:

1   Use your everyday Natural INPL job to load the administration tool (Natural application SYSATM) and associated message texts into your Natural system. For reference a sample Natural INPL job called CORI061 can be found with the sibling System Coordinator product in the jobs distribution file. The INPL job's work file 1 must reference the distribution file ATM*vrs*.INPL and work file 2 must reference ATM*vrs*.ERRN.

   > **Note:** If you use Natural Security in this system, define the libraries SYSATM and SYSMT*vrs* (where vrs is the level you are installing) and protect as you require. You may define MENU as the startup transaction for SYSATM. However, you must not define a startup transaction for SYSMT*vrs*.

2   Use the following parameter to define the Natural session where SYSATM is to be used:

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

where *dbid* and *fnr* define the location of the Adabas System Coordinator configuration file.

Alternatively, assemble the Natural parameter module with

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

Step 3: Enable the Client Process

≫ **To enable the Adabas Transaction Manager client process:**

1 For the Adabas System Coordinator:

- make the modified Adabas link module available (BLSLIBnn);

- make the generated configuration module CORCFG available (BLSLIBnn); and

- make the Adabas System Coordinator load library available (BLSLIBnn).

2 For Adabas Transaction Manager:

- make the Adabas Transaction Manager load library available (BLSLIBnn).

3 For each Client:

- refer to the section Client Runtime Controls for details on how to define the necessary runtime controls to enable a client for transaction management.

Step 4: Enable the Database Process for Two-Phase Commit

≫ **To enable the Adabas Transaction Manager database process for two-phase commit:**

1 For the Adabas System Coordinator:

- make the Adabas System Coordinator load library available (BLSLIBnn).

2 For Adabas Transaction Manager:

- set the Adabas parameter `ADARUN DTP=RM`.
- include a DD statement for DDWORKR4.

Ensure this identifies a suitable WORK dataset which is allocated and formatted in the same way as the main WORK data set. In the case of a Cluster Services or Parallel Services database, the WORK 4 dataset is shared by all members of the cluster.

⚠ **Important:** For details about the WORK4 dataset, including information about sizing, please refer to the Adabas documentation, under *Defining an Adabas Database*, which is part of *Database Maintenance Tasks* in the section *DBA Tasks*.

■ make the Adabas Transaction Manager load library available (BLSLIBnn).

> **Note:** An unmodified ADALNK must be available to the database in preference to the ADALNK created during the installation of the Adabas System Coordinator.

Step 5: Prepare the recovery file

All recovery information is maintained in a single direct access file defined to the Adabas System Coordinator daemon where the transaction manager service runs. The recovery file is shared by all transaction managers operating in the same Adabas System Coordinator group. For reference a sample formatting job called CORI040 can be found with the sibling System Coordinator product in the jobs distribution file. Change the parameters in this sample job with the following considerations:

```
"dsname" (file name)
```

Specify the file name, for example SAG.ATM*vrs.cor-group-name*.TMRFI

```
"nn" (file size in cylinders) and "@@@@" (device type)
```

The minimum block size of the file must be 4096 bytes, and we recommend a minimum size of 13,500 blocks for each transaction manager sharing the file. With reference to the Adabas Device Types and Block sizes section of the DBA Reference Summary, calculate how many cylinders are required for this many blocks based on the device type(s) available at your site. For example, when formatting a file assigned as a WORK component (as defined in the sample job), 13,500 blocks equates to 100 cylinders (*nn*) when using a 3390 device type ("*@@@@*").

> **Note:** It is very important that all transaction managers operating within the same Adabas System Coordinator group **share the same recovery file**.

Step 6: Enable the Transaction Manager to run as a Service within Adabas System Coordinator Daemons

≫ **To enable the Transaction Manager to run as a Service within Adabas System Coordinator daemons:**

1 set `PRODUCT=ATM` in the parameter input of each System Coordinator daemon within which you wish to run the Transaction Manager.

2 ensure the TM controls are correctly defined for each System Coordinator daemon within which you wish to run the Transaction Manager. Refer to How to maintain TM controls.

3 make the Adabas Transaction Manager load library available (BLSLIBnn).

4 refer to the section **Prerequisites...Adabas System Coordinator** for information on the System Coordinator daemon dataset definitions necessary for the correct operation of the Transaction Manager.

Step 7: Verify the Installation

Use the procedure described in section **Verifying the Installation** to ensure that the installation has been successful.

12   Verifying the Installation

At the end of the installation process, you should verify that the installation was successful by performing the steps described in this section.

Verify Client Communication with the Transaction Manager

≫ **To verify client communication with the transaction manager:**

1   If it is currently executing, stop the TP system where you will use Adabas Transaction Manager Online Services.

    This must be a TP system in which the Adabas Transaction Manager client has been installed, with client runtime controls ATM=ON and System Coordinator Group Name identifying the group within which the transaction manager is operating.

2   Start the transaction manager.

3   Start (or restart) the TP system so that the Adabas Transaction Manager client is loaded and initialized.

4   Log on to the Adabas Online System (AOS). Select Adabas Transaction Manager to invoke the Online Services application SYSATM.

5   The transaction manager is identified automatically by the Adabas Transaction Manager client proxy when you enter SYSATM.

    One of the listed items should be recognizable either as the Terminal ID you noted in step 4 or the User ID of your current session, depending on your TP environment. This verifies the basic operation of the Adabas Transaction Manager client proxy.

6   Select Special Services, then Fix Display.

    The default fix display is for the local client, but by choosing PF4 'Other' and marking the Coordinator Daemon option along with the Node ID of the System Coordinator daemon within which the transaction manager is operating, the transaction manager fix display is shown. This verifies that communication with the transaction manager is functioning correctly, even if the list of fixes is empty.

7   Terminate your SYSATM session.

Verify Two-Phase Commit Operation

> **To verify two-phase commit operation:**

1   Start two databases with the parameter setting `ADARUN DTP=RM`: one database containing a standard Employees file and the other database containing a standard Vehicles file.

2   In library SYSMT*vrs* (where *vrs* is the version, revision, and system maintenance level of Adabas Transaction Manager), modify the test program DEMODTP so that it correctly refers to the Employees and Vehicles files.

3   Execute the DEMODTP program, supplying a non-zero value when prompted for a new personnel number.

4   When the message "About to commit" is displayed

   ■ start a new session in your TP system

   ■ log on to the Adabas Online System (AOS)

   ■ select Adabas Transaction Manager, then Transaction Manager Information, and then Active Transactions.

   The display of your pending transaction should indicate that two databases are involved in it.

   > **Note:** This test is not valid in a CICS/RMI environment in which Natural executes in pseudo-conversational mode. In this mode, the INPUT statement that displays the message "About to commit" causes CICS to take a syncpoint at end-of-task and commit the pending Adabas updates. To verify correct operation in a CICS/RMI environment, this test should be done in a Natural session that was started with `PSEUDO=OFF`, or for which the client runtime control Adabas transaction dynamics has been set to FULL or FORCED (depending on the setting of the client runtime control Open distributed transaction support).

   > **Note:** This test is not valid in an IMS TM environment in which RRMS acts as the superior transaction coordinator. In such an environment, the TM control Open distributed transaction (system) should take the value NO.

5   Display additional details of the transaction by marking it on the screen and pressing Enter.

6   Return to the session where your transaction is waiting to be completed and press Enter.

7   Use SYSATM to check that the transaction no longer appears in the Transaction Manager Information "Active Transactions" list.

8   Execute the program DEMODTP again to ensure that the personnel number was changed consistently in the Employees and Vehicles files.

You can now be assured of global transaction integrity in client environments and databases where the software is installed.